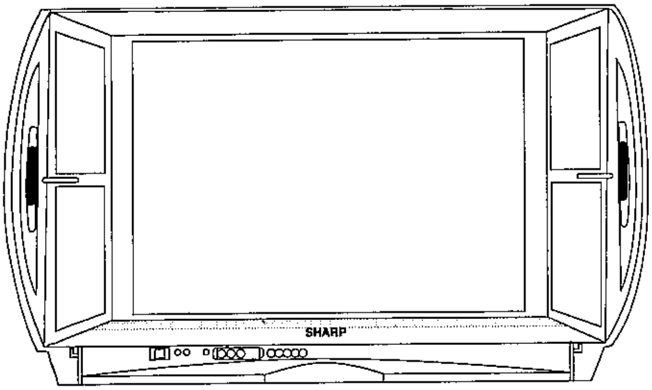
SHARP

SERVICE MANUAL
维修手册

S480729RN1///



COLOUR TELEVISION
彩色电视机

Chassis No. SS-1

MODELS 25RN1
型　号 29RN1

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

为了用户安全起见(根据一些国家的安全规程的需要)，应将电视机保持于最初的状态，而且只能使用与指定物相同的部件。

FEATURE

- World Multi 21 system
- Auto Search Tuning System
- 100-CH Program Memory
- AV STEREO SOUND
- High Contrast Picture (Black Stretch Circuit)
- CATV (Hyper Band) Ready <Use Frequency Synthesizer Tuner>
- 7 Mode Surround System
- Picture Signal Improvement Circuit
- 6 Language OSD
- On Timer/ Sleep Timer/ Reminder Timer
- Picture Noise Reduction Circuit
- Blue Back Noise Mute
- Front & Rear AV-In/Out Terminals

主要功能

- 21制式全世界通用型
- 自动寻台调谐系统
- 100频道程序存储器
- AV(声/像)立体声
- 高对比度图像(黑色脉冲展宽电路)
- 有线闭路电路可并路状态(使用频率合成器调谐器)
- 七种状态环绕立体声系统
- 图像信号改善电路
- 六种语言在屏表示功能
- 开机定时器/睡眠定时器/提醒定时器
- 显像噪音衰减电路
- 蓝色背景噪声抑制功能
- 前面和后面声像输入/输出插孔

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user – serviceable parts inside. Refer servicing to qualified service personnel.

警　告

该电视机底盘的有些部分通电。当维修本机底盘时，请在电源线插头和电源插座之间使用隔离变压器。

为了防止电击的危险，不要去拆下机盖。在里面的部件，不是使用者所能维修的，必须委托够格的维修人员来进行维修。

SHARP CORPORATION

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SPECIFICATIONS

Convergence	Self Convergence System
Focus	Bi-Potential, Uni-Potential Electroslatic
Sweep Deflection	Magnetic
Intermediate Frequency	
Picture IF Carrier	38.9 MHz
Sound IF Carrier	
6.5 MHz	32.4 MHz
6.0 MHz	32.9 MHz
5.5 MHz	33.4 MHz
4.5 MHz	34.4 MHz
Colour Sub-Carrier	
PAL/NTSC	34.47 MHz
SECAM	34.494/34.65 MHz
NTSC	35.32 MHz
Power Input	AC 110-240V, 50/60Hz (Auto)
Power Consumption	130W (25RN1) 185W (29RN1)
Audio Power Output Rating	10 W x 2 (Max)
Speaker	
Size	10 cm Round x 2-pcs. + 10 cm Round Woofer x 2-pcs.
Voice Coil Impedance	8 ohm at 400 Hz
Aerial Input Inpedance	75 ohm Unbalanced
Receiving Channels	
PAL-B/G, SECAM-B/G	
VHF	E2 thru E12
UHF	E21 thru E69
PAL-D/K, SECAM-D/K	
VHF	R1 thru R12, C1 thru C12
UHF	R21 thru R69, C13 thru C57
PAL-I	
VHF	(IRELAND): B thru J
UHF	(U.K.,H.K.): 21 thru 69
NTSC	
VHF	(US): 2 thru 13 (JAPAN): 1 thru 12
UHF	(US): 14 thru 69 (JAPAN): 13 thru 62
CATV	S1 thru S20 S21 thru S41 (Hyper)
Receiving Frequency	
VHF Low	48.25 MHz thru 436.25 MHz
UHF	471.25 MHz thru 863.25 MHz
Dimensions (Approx.)	810.0 (W) x 515.0 (H) x 530.0 (D) mm (25RN1) 920.0 (W) x 582.0 (H) x 499.0 (D) mm (29RN1)
Weight (Approx.)	35.3 kg (25RN1) 40.5 kg (29RN1)
Cabinet Material	Plastics

Specifications are subject to change without notice.

电路规格

聚焦	自聚焦系统
焦点	双电位、单电位静电焦点
扫描偏转	磁致偏转
中频	
图象中频载波	38.9MHz
声音中频载波	
6.5MHz	32.4MHz
6.0MHz	32.9MHz
5.5MHz	33.4MHz
4.5MHz	34.4MHz
色彩副载波	
PAL/NTSC制式	34.47MHz
SECAM制式	34.494/34.65MHz
NTSC制式	35.32MHz
电源输入	交流110～240V、50/60Hz(自动切换)
功率消耗	130W(型号25RN1) 185W(型号29RN1)
音响额定输出功率	10W×2(最大)
扬声器	
尺寸	10cm圆型×2只＋10cm低音扬声器×2只
音圈阻抗	8Ω(400Hz时)
天线输入阻抗	75Ω非平衡式
接收频道	
PAL-B/G、SECAM-B/G制式	
甚高频VHF	E2～E12频道
超高频UHF	E21～E69频道
PAL-D/K、SECAM-D/K制式	
甚高频VHF	R1～R12频道 C1～C12频道
超高频UHF	R21～R69频道 C13～C57频道
PAL-I制式	
甚高频VHF	（爱尔兰）：B～J频道
超高频UHF	（英国，香港）：21～69频道
NTSC制式	
甚高频VHF	（美国）：2～13频道 （日本）：1～12频道
超高频UHF	（美国）：14～69频道 （日本）：13～62频道
有线电视CATV	S1～S20频道 S21～S41频道 (超高频)
接收频率	
低域甚高频VHF	48.25MHz～436.25MHz
超高频UHF	471.25MHz～863.25MHz
尺寸（大约）	810.0(宽)×515.0(高)×530.0(深)mm(型号25RN1) 920.0(宽)×582.0(高)×499.0(深)mm(型号29RN1)
重量（大约）	35.3kg(型号25RN1) 40.5kg(型号29RN1)
机壳	均由塑料而成

上述规格变更之场合，恕不另行通知

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10k ohm Resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord ahould be disconnected from AC outlet.)

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing many produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. 25RN1:When repairing the circuit, be sure not to increase the high voltage to more than 32.0 kV (at beam 0µA) for the set.
   29RN1:When repairing the circuit, be sure not to increase the high voltage to more than 33.0 kV (at beam 0µA) for the set.
2. 25RN1:To keep the set in a normal operation, be sure to make it function on 29.0 ± 1.5kV (at beam 1300µA) in the case of the set. The set has been factory-Adjusted to the above mentioned high voltage.
   29RN1:To keep the set in a normal operation, be sure to make it function on 30.0 ± 1.5kV (at beam 1500µA) in the case of the set. The set has been factory-Adjusted to the above mentioned high voltage.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-Ray radiation.

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective device such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators etc.

保养维修重要注意事项

本电视机的保养只得由专门技术人员进行。

关于高压系统和显象管的保养维修

对高压系统进行保养维修时，先于显象管管座金属部分与第二阳极引线间用绝缘线（诸如测试探针等）串接一只10KΩ的电阻器，以除去残留于高压系统中的静电。（之前，应从电源插座中拔出本机的电源引线插头。）

1. 本电视机显象管为整体内爆防护设计。
2. 为保证本电视机持久使用的安全，显象管的更换必须使用同型号者。
3. 搬移显象管时，不得倒持其颈部上提。
4. 拆装搬移显象管，必须先用布物等包护荧屏防碎玻璃，并且作完全放电处理后才能进行。

关于X射线

本电视机为无辐射的设计。因此，任何X射线均设计控制于最小绝对极限。然而，在发生故障或保障维修时，过长时间地暴露机芯内部加以放置之场合，便有可能在其近旁产生有害的X射线辐射影响。为此，务请遵循下述预防措施：

1. 型号25RN1：维修调整本电视机内部电路时，切勿让其高压超过32.0kV(电子束电流为0μA时)。
   型号29RN1：维修调整本电视机内部电路时，切勿让其高压超过33.0kV(电子束电流为0μA时)。
2. 型号25RN1：为保证本电视机的正常工作，务必保证其高压为29.0kV±1.5kV(电子束电流为1300μA时）的工作条件。该工作条件值在本电视机出厂前已经调试验收。
   型号29RN1：为保证本电视机的正常工作，务必保证其高压为30.0kV±1.5kV(电子束电流为1500μA时)的工作条件。该工作条件值在本电视机出厂前已经调试验收。
3. 更换显象管时，不得使用非经认可的不同厂家、不同型号的显象管，以免产生超过规定标准的X射线辐射的危险。

维修后归还之前

在把维修后的电视机归还给用户之前，务请进行下列的安全检查。

1. 检查电视机中的所有导线的绝缘包皮有无扭折破损之处，于机芯底板和其它金属部件之间有无他物夹杂。
2. 检查电视机中的所有非金属质的控制旋钮、绝缘鱼鳞纸，机壳后盖、调节器和仪器隔室盖罩或屏蔽，电阻—电容隔离网以及机械部件隔离器等保护绝缘装置、器材。

ADJUSTMENT PRECAUTIONS

This model's setting are adjusted in two different ways: though the I^2C bus control and in the conventional analog manner. The adjustments via the I^2C bus control include preset-only items and variable data.

1. Calling the service mode by the microprocessor.

① Set the switch S1006 to the service mode position, and the microprocessor is put service mode. (Adjustment through the I^2C bus control)
② Press the CH UP key on the remote controller to get ready to select the mode one by one.
③ Press the CH DOWN key on the remote controller to select the modes reversely one by one.
④ Using the VOLUME UP/ VOLUME DOWN key on the remote controller, the data can be modified.
⑤ Set the switch S1006 to the normal mode (OFF) position, and the microprocessor is put out of the service mode.

2. Factory Presettings.

① Set the switch S1006 to the service mode position and turn on the main power switch. Initial values are automatically preset only when a new E^2PROM is used (judgement with the first 4 bytes).
② The initial data are preset as listed in page 8~12.
③ Make sure the data need modify or not (Initial data).

IMPORTANT
Note: Once the chassis has been put together and ready to be POWER ON for the FIRST TIME, make sure to set the switch S1006 to the service mode position first and then turn on the main power switch (See 2-(1) above).

调整时注意事项

本型号电视机由I^2C总线控制与一般的模拟调节综合进行。I^2C总线控制包括初始设定(预设)以及下述的变量数据项目的调整设定。

1)微处理机的保养调整状态的设定

①变S1006开关于保养调整状态位置，微处理机即处于保养调整状态(I^2C总线控制调整状态)。
②触按遥控器上的频道上移键以顺序选择各种保养调整状态。
③触按遥控器上的频道下移键，以相反顺序选择各种保养调整状态。
④触按遥控器上的音量增加/减少键，可变换调整数据。
⑤取消保养调整状态时，变S1006开关(关闭侧)于正常状态位置即可。

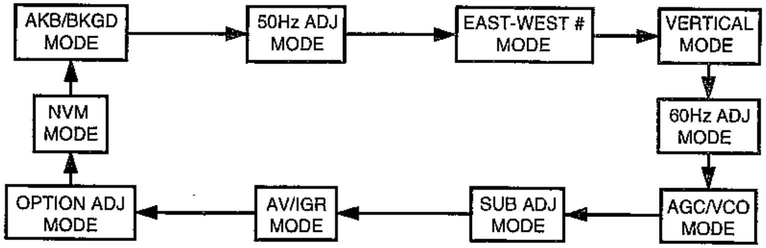
2)出厂时的初始值(预设值)设定

①变S1006开关于保养调整状态位置，打开主电源开关，即自动地设定初始值。
(仅限于EEPROM为新品时)
(根据最前头的4位字节而判断)
②初始值设定数据详见保养调整状态之项所列(参见第8页至12页)
③检查需不需要设定数据(初始设定数据)的改变。

重要
注意：在组装电视机底盘而作好打开电源的准备时，必须先变S1006开关于保养调整状态位置，然后再打开主电源开关(见2-(1)之项所述)。

■ SERVICE MODE

1.) In the Service Mode, Key is used to select the mode in the following order.

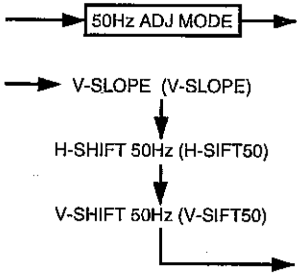


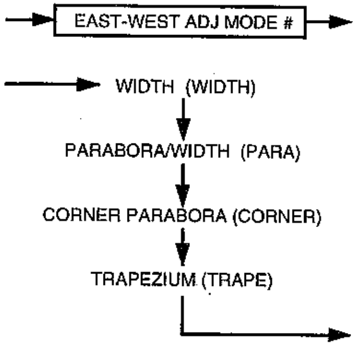
FORWARD: CH UP
REVERSE: CH DOWN

AKB/BKGD MODE

. WHITE POINT (G)
. WHITE POINT (B)
. AKB ON/OFF

KEY	UP	DOWN
WHITE-POINT(G)	2 KEY	5 KEY
WHITE-POINT(B)	3 KEY	6 KEY
AKB	8 KEY	ON/OFF

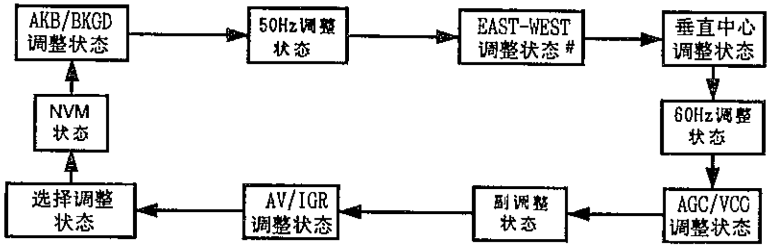




In the direction of arrow: CH UP key
In the opposite direction : CH DOWN key
* The character in parentheses appear on the on-screen display.
# This function is not available on 25TV.

■ 保养调整状态

1)在保养调整状态下，按下列要求触按相应键钮以选择所需调整状态。

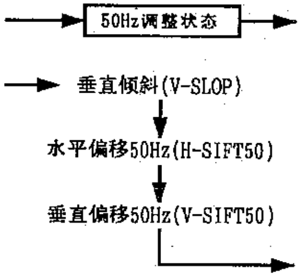


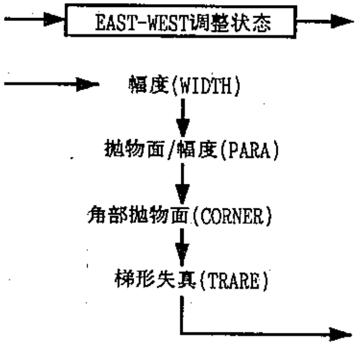
顺时针方向：频道上移
逆时针方向：频道下移

AKB/BKGD调整状态

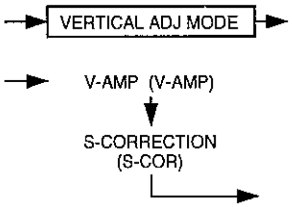
・白色位置(绿色)
・白色位置(蓝色)
・AKB打开/关闭

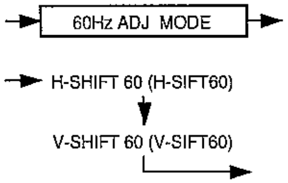
键钮	上移	下移
白色位置(绿色)	2键	5键
白色位置(蓝色)	3键	6键
AKB	8键	打开/关闭

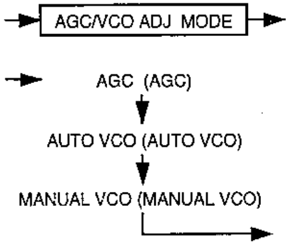


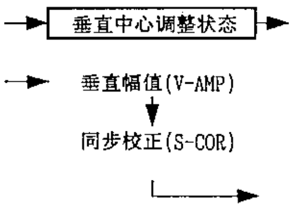


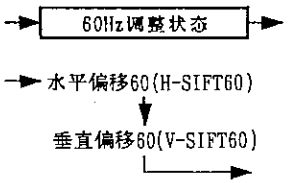
箭头方向：频道上移键
相反方向：频道下移键
#本功能不能用于型号25的电视机。

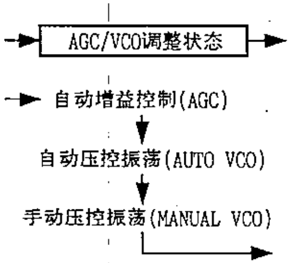


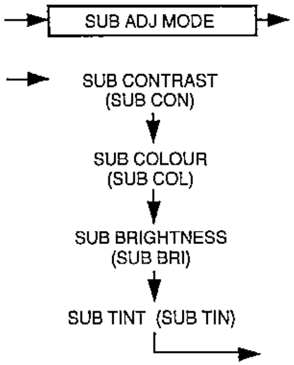


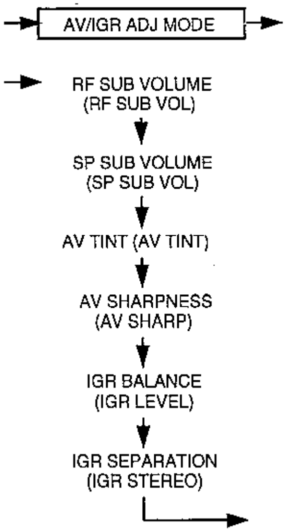


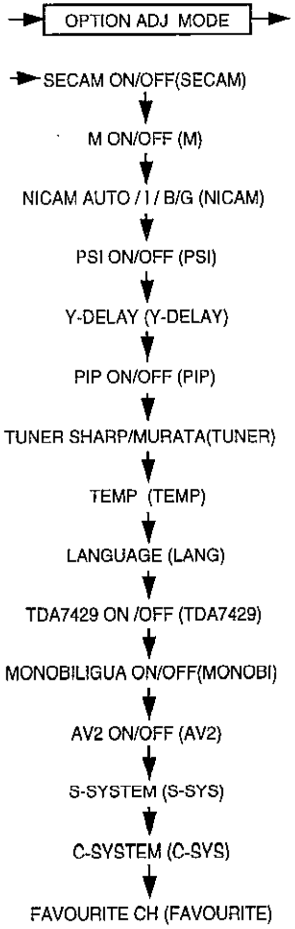


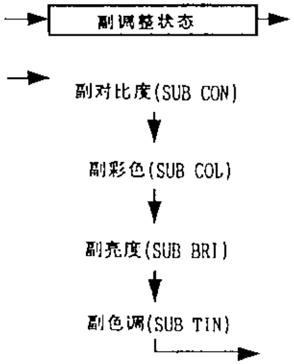


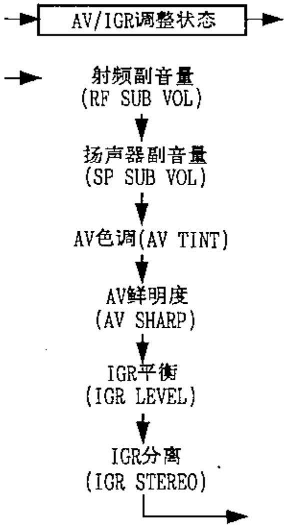


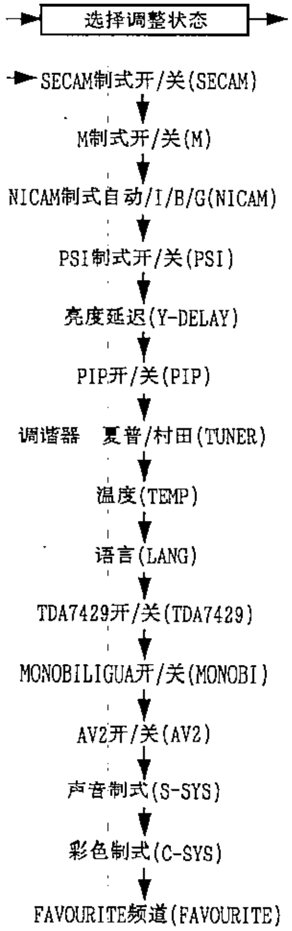



AV/IGR ADJ MODE
RF SUB VOLUME (RF SUB VOL)
SP SUB VOLUME (SP SUB VOL)
AV TINT (AV TINT)
AV SHARPNESS (AV SHARP)
IGR BALANCE (IGR LEVEL)
IGR SEPARATION (IGR STEREO)









In the direction of arrow: CH UP key
In the opposite direction: CH DOWN key
* The character in parentheses appear on the on-screen display.

箭头方向：频道上移键
相反方向：频道下移键
＊在荧屏上显示出括号内的文字。

INITIAL SETTING OF E^{2}PROM

E^{2}PROM ITEMS	DATA LENGTH	INITIAL DATA	REMARK
AKB	ON/OFF	ON	
WHITE POINT (R)	0~ 63	32	
WHITE POINT (G)	0~ 63	32	
WHITE POINT (B)	0~ 63	32	
V-SLOPE	0~ 63	25	
H-SHIFT 50Hz	0~ 63	25(TV))	
V-SHIFT 50Hz	0~ 63	32 (TV)	
WIDTH	0~ 63	48	
PARA	0~ 63	36	
CORNER	0~ 63	28	
TRAP	0~ 63	32	
V-AMP	0~ 63	17	
S-COR	0~ 63	15	
H-SHIFT 60Hz	0~ 63	31(TV)	
V-SHIFT 60Hz	0~ 63	26(TV)	
AGC	0~ 63	15	
AUTO VCO	0~127	NG 55	
MANUAL VCO	0~127	55	
SUB-CONTRAST	0~ 63	63	
SUB COLOUR	0~ 63	19	
SUB BRIGHT	0~ 63	31	
SUB TINT	0~ 63	27	
RF SUB VOLUME	0~ 63	35	
SP SUB VOLUME	0~ 63	55	
AV TINT	0~ 63	00	
AV SHARP	0~ 63	00	
IGR LEVEL	0~10	05	
IGR STEREO	0~ 31	24	
SECAM	ON/OFF	ON	
M	ON/OFF	ON	
NICAM	AUTO/OFF	AUTO	
PSI	ON/OFF	ON	
Y-DELAY	0~ 15	00(TV), 00(AV)	
PIP	ON/OFF	OFF	
TUNER	SHARP/MURATA	SHARP	
TEMP	0~1	0	
LANG	ON/OFF	ON	
TDA7429	ON/OFF	ON	
MONOBI	ON/OFF	OFF	
AV2	ON/OFF	ON	
S-SYS	ON/OFF	ON	
C-SYS	ON/OFF	ON	
FAVOURITE CH	ON/OFF	OFF	
NVM	-	-	

EEPROM的初始值设定

EEPROM项目	数据可变范围	初始值	备注
AKB	打开/关闭	打开	
白色位置(红色)	0~ 63	32	
白色位置(绿色)	0~ 63	32	
白色位置(蓝色)	0~ 63	32	
垂直倾斜	0~ 63	25	
水平偏移50Hz	0~ 63	25(TV)	
垂直偏移50Hz	0~ 63	32 (TV)	
幅度	0~ 63	48	
抛物面	0~ 63	36	
角部抛物面	0~ 63	28	
梯形失真	0~ 63	32	
垂直幅值	0~ 63	17	
同步校正	0~ 63	15	
水平偏移60Hz	0~ 63	31(TV)	
垂直偏移60Hz	0~ 63	26(TV)	
自动增益控制	0~ 63	15	
自动压控振荡	0~127	NG 55	
手动压控振荡	0~127	55	
副对比度调节	0~ 63	63	
副彩色调节	0~ 63	19	
副亮度调节	0~ 63	31	
副色调调节	0~ 63	27	
射频副音量	0~ 63	35	
扬声器副音量	0~ 63	55	
AV色调	0~ 63	00	
AV鲜明度	0~ 63	00	
IGR平衡	0~10	05	
IGR分离	0~ 31	24	
SECAM制式	打开/关闭	打开	
M制式	打开/关闭	打开	
NICAM制式	自动/关闭	自动	
PSI制式	打开/关闭	打开	
亮度延迟	0~ 15	00(TV), 00(AV)	
PIP	打开/关闭	关闭	
调谐器	夏普/村田	夏普	
温度	0~1	0	
语言	打开/关闭	打开	
TDA7429	打开/关闭	打开	
MONOBI	打开/关闭	关闭	
AV2	打开/关闭	打开	
声音制式	打开/关闭	打开	
彩色制式	打开/关闭	打开	
FAVOURITE频道	打开/关闭	关闭	
NVM	-	-	

MCL1 & MCL2 CHANNEL SETTING

1). In service mode, After execute select POS 1, setting the following data in E^{2}PROM.

MCL1 (R/C CODE =117)				MCL2 (R/C CODE=169)			
CH-NO	Fv (MHz)	SOUND SYS		CH-NO	Fv (MHz)	SOUND SYS	
1	48.25	AUTO		1	46.25	AUTO	
2	62.25	AUTO		2	64.25	AUTO	
3	77.25	AUTO		3	86.25	AUTO	
4	175.25	AUTO		4	95.25	AUTO	
5	182.25	AUTO		5	138.25	AUTO	
6	183.25	AUTO		6	175.25	AUTO	
7	191.25	AUTO		7	182.25	AUTO	
8	196.25	AUTO		8	189.25	AUTO	
9	210.25	AUTO		9	196.25	AUTO	
10	224.25	AUTO		10	209.25	AUTO	
11	471.25	AUTO		11	216.25	AUTO	
12	487.25	AUTO		12	SKIP OFF FREE		
13	503.25	AUTO		13	SKIP OFF FREE		
14	575.25	AUTO		14	SKIP OFF FREE		
15	599.25	AUTO		15	SKIP OFF FREE		
16	621.25	4.5	M	16	SKIP OFF FREE		
17	639.25	AUTO		17	SKIP OFF FREE		
18	703.25	AUTO		18	527.25	AUTO	
19	735.25	AUTO		19	847.25	AUTO	
20	767.25	AUTO		20	48.25	AUTO	
21	815.25	AUTO		21	175.25	AUTO	
22	855.25	AUTO		22	210.25	AUTO	
23	855.25	AUTO		23	224.25	AUTO	
24	55.25	4.5	M	24	575.25	AUTO	
25	83.25	4.5	M	25	599.25	AUTO	
26	183.25	4.5	M	26	767.25	AUTO	
27	193.25	4.5	M	27	183.25	4.5	M
28	217.25	4.5	M	28	193.25	4.5	M
29	471.25	4.5	M	29	112.25	AUTO	
30	477.25	4.5	M	30	168.25	AUTO	
31	693.25	4.5	M	31	SKIP OFF FREE		
32	SKIP OFF FREE			32	294.25	AUTO	
33	112.25	AUTO		33	463.25	AUTO	
34	169.25	AUTO		34	174.95	AUTO	
35	SKIP OFF FREE			35	175.55	AUTO	
36	294.25	AUTO		36	SKIP OFF FREE		
37	463.25	AUTO		37	SKIP OFF FREE		
38	SKIP OFF FREE			38	SKIP OFF FREE		
39	647.25	AUTO		39	SKIP OFF FREE		

MCL1和MCL2的频道设定

1)在保养调整状态下选择POS1后，将下列数据设定于EEPROM之中。

MCL1(遥控器代码=117)				MCL2(遥控器代码=169)			
频道号	Fv(MHz)	声音制式		频道号	Fv(MHz)	声音制式	
1	48.25	自动		1	46.25	自动	
2	62.25	自动		2	64.25	自动	
3	77.25	自动		3	86.25	自动	
4	175.25	自动		4	95.25	自动	
5	182.25	自动		5	138.25	自动	
6	183.25	自动		6	175.25	自动	
7	191.25	自动		7	182.25	自动	
8	196.25	自动		8	189.25	自动	
9	210.25	自动		9	196.25	自动	
10	224.25	自动		10	209.25	自动	
11	471.25	自动		11	216.25	自动	
12	487.25	自动		12	跳跃关闭自由		
13	503.25	自动		13	跳跃关闭自由		
14	575.25	自动		14	跳跃关闭自由		
15	599.25	自动		15	跳跃关闭自由		
16	621.25	4.5	M	16	跳跃关闭自由		
17	639.25	自动		17	跳跃关闭自由		
18	703.25	自动		18	527.25	自动	
19	735.25	自动		19	847.25	自动	
20	767.25	自动		20	48.25	自动	
21	815.25	自动		21	175.25	自动	
22	855.25	自动		22	210.25	自动	
23	855.25	自动		23	224.25	自动	
24	55.25	4.5	M	24	575.25	自动	
25	83.25	4.5	M	25	599.25	自动	
26	183.25	4.5	M	26	767.25	自动	
27	193.25	4.5	M	27	183.25	4.5	M
28	217.25	4.5	M	28	193.25	4.5	M
29	471.25	4.5	M	29	112.25	自动	
30	477.25	4.5	M	30	168.25	自动	
31	693.25	4.5	M	31	跳跃关闭自由		
32	跳跃关闭自由			32	294.25	自动	
33	112.25	自动		33	463.25	自动	
34	169.25	自动		34	174.95	自动	
35	跳跃关闭自由			35	175.55	自动	
36	294.25	自动		36	跳跃关闭自由		
37	463.25	自动		37	跳跃关闭自由		
38	跳跃关闭自由			38	跳跃关闭自由		
39	647.25	自动		39	跳跃关闭自由		

MCL1 (R/C CODE =117)			MCL2 (R/C CODE=169)		
CH-NO	Fv (MHz)	SOUND SYS	CH-NO	Fv (MHz)	SOUND SYS
40	663.25	AUTO	40	SKIP OFF FREE	
41	679.25	AUTO	41	SKIP OFF FREE	
42	174.95	AUTO	42	SKIP OFF FREE	
43	175.55	AUTO	43	SKIP OFF FREE	
44	SKIP OFF FREE		44	SKIP OFF FREE	
45	SKIP OFF FREE		45	SKIP OFF FREE	
↓	SKIP OFF FREE		↓	SKIP OFF FREE	
	SKIP OFF FREE			SKIP OFF FREE	
99	SKIP OFF FREE		99	SKIP OFF FREE	

MCL1(遥控器代码=117)			MCL2(遥控器代码=169)		
频道号	Fv(MHz)	声音制式	频道号	Fv(MHz)	声音制式
40	663.25	自动	40	跳跃关闭自由	
41	679.25	自动	41	跳跃关闭自由	
42	174.95	自动	42	跳跃关闭自由	
43	175.55	自动	43	跳跃关闭自由	
44	跳跃关闭自由		44	跳跃关闭自由	
45	跳跃关闭自由		45	跳跃关闭自由	
↓	跳跃关闭自由		↓	跳跃关闭自由	
	跳跃关闭自由			跳跃关闭自由	
99	跳跃关闭自由		99	跳跃关闭自由	

SHIPPING SETTING IX3007CEZZ

NO	ITEMS	SETTING 1	SETTING 2	SETTING 3	SETTING 4	SETTING 5
1	SKIP POS 0	ON	->	->	->	->
2	SKIP POS 1 ~99	OFF	->	->	->	->
3	AFT	ON	->	->	->	->
4	COLOUR SYSTEM	AUTO	->	->	->	->
5	SOUND SYSTEM	D/K	I	AUTO	AUTO	AUTO
6	IGR FORCE FM	OFF	->	->	->	->
7	IGR STEREO	STEREO	->	->	->	->
8	IGR BILINGUAL	MAIN	->	->	->	->
9	NICAM FORCE FM	OFF	->	->	->	->
10	NICAM BILINGUAL	M1	->	->	->	->
11	LAST POWER	ON	->	->	->	->
12	LAST TV/AV	TV	->	->	->	->
13	DIGIT	2 DIGIT	->	->	->	->
14	LANGUAGE	CHINESE	CHINESE	ENGLISH	ARABIC	RUSSIAN
15	BLUE BACK	ON	->	->	->	->
16	AV SELECT ON/OFF	OFF	->	->	->	->
17	AV SELECT STD/GAME	STD	->	->	->	->
18	LAST POSITION	1	->	->	->	->
19	LAST FB POSITION	1	->	->	->	->
20	VOLUME	0 (MIN)	->	->	->	->
21	BALANCE	0 (L,R)	->	->	->	->
22	BASS	0	->	->	->	->
23	MIDDLE	0	->	->	->	->
24	TREBLE	0	->	->	->	->
25	SURROUND	OFF	->	->	->	->
26	CONTRAST	63	->	->	->	->
27	COLOUR	31	->	->	->	->
28	BRIGHTNESS	31	->	->	->	->
29	TINT	31	->	->	->	->
30	SHARPNESS	31	->	->	->	->
31	TIMER	CLEAR	->	->	->	->
32	SAVE	OFF	->	->	->	->
33	PICTURE NR	OFF	->	->	->	->
34	INSET TINT	31	->	->	->	->
35	PIP DISPLAY POS	SE	->	->	->	->
36	PIP SIZE	L	->	->	->	->
37	PIP LAST POS	1	->	->	->	->
38	PIP LAST TV/AV	TV	->	->	->	->
39	FREEZE	OFF	->	->	->	->
40	MONORAL BILINGUAL	S 1	->	->	->	->

IX3007CEZZ 出厂时的初始值设定

编号	项目	设定1	设定2	设定3	设定4	设定5
1	跳跃位置0	打开	->	->	->	->
2	跳跃位置1～99	关闭	->	->	->	->
3	自动微调设定位置	打开	->	->	->	->
4	彩色制式设定位置	自动	->	->	->	->
5	声音制式设定位置	D/K	I	自动	自动	自动
6	IGR强制调频设定位置	关闭	->	->	->	->
7	IGR制式立体声设定位置	立体声	->	->	->	->
8	IGR制式两种语言设置位置	主要部分	->	->	->	->
9	NICAM制式强制调频设定位置	关闭	->	->	->	->
10	NICAM制式两种语言设定位置	M1	->	->	->	->
11	最后电源开关位置	打开	->	->	->	->
12	最后电视/声像设定位置	TV	->	->	->	->
13	数字设定位置	2位	->	->	->	->
14	语言选择位置	中文	中文	英文	阿拉伯文	俄文
15	蓝色背景设定位置	打开	->	->	->	->
16	声像选择开关位置	关闭	->	->	->	->
17	声像选择位置 标准/游戏	STD	->	->	->	->
18	最后设定位置	1	->	->	->	->
19	最后FB设定位置	1	->	->	->	->
20	音量设定位置	0 (MIN)	->	->	->	->
21	平衡设定位置	0 (L,R)	->	->	->	->
22	低音设定位置	0	->	->	->	->
23	中音设定位置	0	->	->	->	->
24	高音设定位置	0	->	->	->	->
25	环绕立体声设定位置	关闭	->	->	->	->
26	对比度设定位置	63	->	->	->	->
27	彩色设定位置	31	->	->	->	->
28	亮度设定位置	31	->	->	->	->
29	色度设定位置	31	->	->	->	->
30	鲜明度设定位置	31	->	->	->	->
31	定时器设定位置	取消	->	->	->	->
32	节电设定位置	关闭	->	->	->	->
33	图像NR设定位置	关闭	->	->	->	->
34	副荧屏色调设定位置	31	->	->	->	->
35	PIP显示屏位置	SE	->	->	->	->
36	PIP尺寸设定位置	L	->	->	->	->
37	PIP最后设定位置	1	->	->	->	->
38	PIP最后电视/声像设定位置	TV	->	->	->	->
39	保持位置	关闭	->	->	->	->
40	单声两种语言设定位置	S 1	->	->	->	->

FACTORY SETTING BY MODEL

(Reference: Geomagnetism adjustment)

SUFFIX AT MODEL NO.	GEOMAGNETISM (H,V)nT	BACKGROUND	LANG.	S-SYS
C (SINGAPORE)	-10,000 40,000	12300K	ENGLISH	AUTO
F/G	30,000 20,000	12300K	ARABIC	AUTO

*FOR ALL "29" AND "25" RN SERIES MODEL
ONCE FINISH FACTORY SETTING, PRESS "PICTURE NR" KEY TWICE TO SWITCH "PICTURE NR" FUNCTION "ON".

各型号的出厂时的设定值

(参考：磁场调整)

型号尾标	磁场(水平、垂直)nT	背景	语言	S-SYS
C (新加坡)	-10,000 40,000	12300K	英文	自动
F/G	30,000 20,000	12300K	阿拉伯文	自动

*有关型号“29”和“25”RN的所有系列产品
出厂时的设定结束后,触按“PICTURE NR”键两次,以起动“PICTURE NR”功能。

SERVICE ADJUSTMENT

■ VCO, AND AGC ADJUSTMENT

1. VCO ADJUSTMENT (I^2C BUS CONTROL)

1. Receive E-10CH 210.25MHz "PAL COLOUR BAR" signal.
   Signal Strength: 60 ~ 70 dB
2. Call "AUTO VCO" in SERVICE mode. If the Channel frequency displays on screen is 210.20MHz, skip 3, 4 & 5 steps.
3. Press FUNCTION button to call "DIRECT FREQ IN".
4. Push "2", "1", "0", "2", "0".
5. Then Press FUNCTION again.
6. Press Volume UP to run "AUTO VCO". Once finishing, "OK" message display on screen.

2. AGC ADJUSTMENT (I^2C BUS CONTROL)

1. Receive E-12CH (PAL COLOR BAR) signal.
   Signal strength : 57 ± 1 dB (75ohm open)
2. Connect the oscilloscope to P201 (Tuner's AGC Terminal) as shown in Figure 1.
3. Call "AGC" in SERVICE mode.
4. Increase or decrease "AGC" by using Volume so that obtain the highest Voltage.
5. Press Volume slowly in the opposite direction until the voltage drops 0.1V ~ 0.3V lower than the highest level.
6. Change the antenna input signal to 63 ~ 67dBµV, and make sure there is no noise.
7. Turn up the input signal to 90 ~ 95 dBµV to be sure that there is no cross modulation beat.

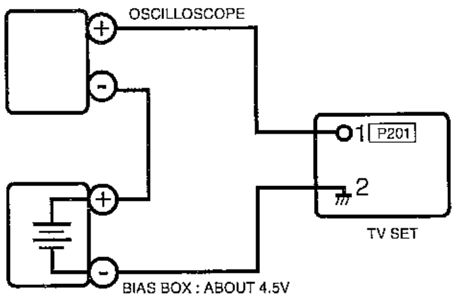


Figure 1

保养调整

■ 压控振荡VCO和自动增益控制AGC的调整

1.压控振荡VCO的调整(I^2C总线控制)

1.接收E-10频道210.25MHz “PAL制式彩条” 信号。
   信号强度：60～70dB
2.在保养调整状态下呼出 “AUTO VCO” 项目。
   荧屏上显示的频率为210.20MHz时,可省略下记3、4和5的步骤。
3.触按FUNCTION键钮以呼出 “DIRECT FREQ IN” 项目。
4.触按 “2” 、“1” 、“0” 、“2” 、“0” 键钮。
5.然后再触按FUNCTION键钮。
6.触按音量增加键钮,以执行 “AUTO VCD” 项目。
   执行结束后，荧屏上显示出 “OK” 表示。

2.自动增益控制AGC的调整(I^2C总线控制)

1.接收E-12频道(PAL制式彩条)信号。
   信号强度：57±1dB(端接75Ω电阻)
2.按图1所示要求接示波器于P201(调谐器的AGC端子)。
3.在保养调整状态下呼出 “AGC” 项目。
4.用音量增加/减少键钮来增加或减少“AGC数据",以获得最大电压读数。
5.相反方向缓慢地触按音量键钮,直至电压读数调至最大值—0.1V～0.3V之程度为止。
6.调节天线输入信号强度为63～67dBμV,确认无噪声出现。
7.再调节天线输入信号强度为90～95dBμV,确认无交扰调制差拍出现。

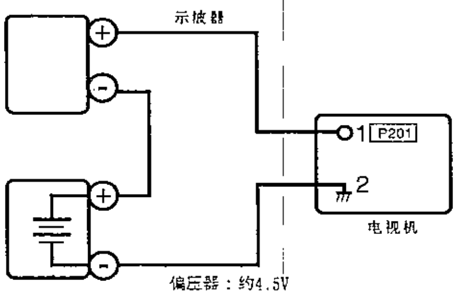


图1

■ SOUND ADJUSTMENT

1. RF SUB VOLUME (I^2C BUS CONTROL)

1. Receive "PAL COLOUR BAR" signal.
   Audio signal: 400 Hz, 100% modulated (50kHz dev.)
2. Connect the Oscilloscope to the Audio Out (L or R) terminal. (Terminate with 10k ohm impendence).
3. Call the "RF SUB VOL" in SERVICE mode.
4. Increase or decrease "RF SUB VOL" by using Volume UP/DOWN key, so that the 400Hz sine wave be 1.76Vp-p.
   Tolerence: 1.76 Vp-p ± 0.10 Vp-p.

2. SP SUB VOLUME (I^2C BUS CONTROL)

1. Receive "COLOUR BAR" signal.
   Audio signal: 400Hz, 100% modulation. (50kHz dev.)
2. Connect Dummy load* to P3304.
3. Connect VTVM's probe to the P3304.
   (1 R, 2 GND, 3 GND, 4 L, 5 NIL, 6 NIL 7 NIL 8 NIL)
4. Call the "SP SUB VOL" in the SERVICE mode.
5. Increase or decrease "SP SUB VOL" by using Volume UP/DOWN key, so that the VTVM should read the value*.

Note:*For 25RN1 & 29RN1:Terminated 16 ohm // 8 ohm (or 5.3 ohm) to get 7.37V ± 0.1V.

3. NOISE MUTE CHECKING

1. Receive the 400Hz modulated signal.
2. Turn up the volume control to Maximum and make sure the sound is heard from the speakers. Then put the unit in the no-signal state.
3. Be sure that the sound mute is effective.
4. Finally turn down the volume control to minimum.

■ 声音制式的调整

1.射频RF副音量(I^2C总线控制)

1.接收“PAL制式彩条”信号。
  音频信号：400Hz 、100%调制(50kHz偏转)
2.接示波器于音频输出端(左或右)。(端接10kΩ电阻)。
3.在保养调整状态下呼出“RF SUB VOL”项目。
4.用音量增加/减少键钮来增加或减少“RF SUB VOL数据”，使400Hz正弦波幅值达至1.76Vp-p的规定要求。
  调整误差：1.76Vp-p ± 0.10Vp-p

2.扬声器SP副音量(I^2C总线控制)

1.接收“彩条”信号。
  音频信号：400Hz 、100%调制(50kHz偏转)
2.接假负载电阻*于P3304。
3.接电子管电压计(VTVM)的探针于P3304。
  (1R、2GND、3GND、4L、5NIL、6NIL、7NIL、8NIL)
4.在保养调整状态下呼出“SP SUB VOL”项目。
5.用音量增加/减少键钮来增加或减少“SP SUB VOL数据”，使VTVM所测读数达至下列所示的规定电压值*。

注意：*型号25RN1和29RN1；端接16Ω//8Ω(或5.3Ω)电阻，以获得7.37V±0.1V电压。

3.消音功能的检查

1.接收400Hz调制信号。
2.设音量控制于最大位置，接着检查扬声器的声音输出，然后，设电视机于无信号接收状态。
3.此时，检查消音功能是否动作。
4.最后，设音量控制于最小位置。

■ PURITY ADJUSTMENT

1. PURITY ADJ.

1. Receive the GREEN -ONLY signal. Adjust the beam current to ~800µA.
2. Orient the raster rotation to 0 eastward.
3. Degauss the CRT enough with the degausing coil.

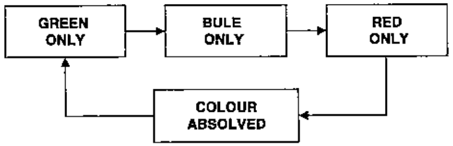
Note: Follow the Job Instruction Sheet (or Page 9) to adjust the magnetic field.
Vertical Bv: +0.030 mT (0.30 gauss)
Horizontal Bh: +0.020 mT (0.20 gauss)

4. Maintain the purity magnet at the zero magnetic field and keep the static convergence roughly adjusted.
5. Observe the points a, b, as shown in Fig.2 - 1 through the microscope. Adjust the landings to A rank requirement.
6. Tighten up the deflection coil screws.
   Tightening torque : 108N ± 20N (11Kgf ± 2Kgf)
7. Make sure the CRT corners landing meet the A rank requirements. If not, stick the magnet sheet to correct it.

Note:This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 1000µA.

Note: Set the service mode by service switch (S 1006) then press factory process R/C RGB key to change to green only.

* For the following colour press colour key to change.



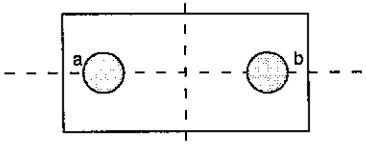


Figure 2-1

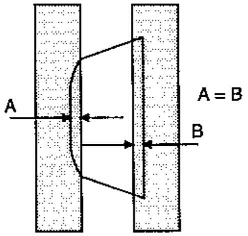


Figure 2-2. Rank A (On the right of CRT)

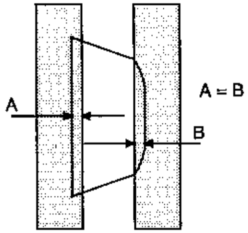


Figure 2-3. Rank A (On the left of CRT)

Figure 2

Text Key "R.G.Cy" Key can be directly use to change to other colours screen.

■ 色彩纯度的调整

1.色彩纯度的调整

1.接收绿单色信号。调电子束电流于800μA。
2.将光栅偏转角度调节至0，并保持显像管面朝东方。
3.通过消磁线圈对阴极显像管CRT作完全消磁处理。

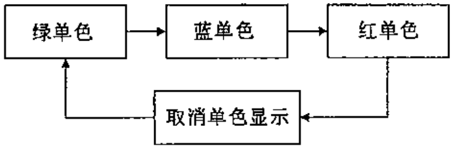
注意：按生产指导说明书(或第9页)的内容调整磁场磁势。
垂直Bv：+0.030mT(0.30高斯)
水平Bh：+0.020mT(0.20高斯)

4.调节色彩纯度磁铁，使其磁场磁势为0，然后对静聚焦度进行粗调。
5.用放大显示镜观察图2-1所示的a点和b点。调节色彩纯度磁铁，使其着屏点位置达至A级的规定要求。
6.紧固偏转线圈的螺丝。
  紧固扭矩：108N ± 20N(11kgf ± 2kgf)
7.检查阴极显像管CRT角部的着屏点位置是否符合A级的规定要求。如果不符合规定要求，则用一磁铁片加以校正。

注意：作此项调整前，先用大于1000μA的电子束电流预热阴极显像管CRT30分钟以上。

注意：用保养设定开关(S1006)设电视机于保养调整状态。然后触按遥控器上的RGB(红绿蓝三色)键钮(工厂处理键钮)，使荧屏变为单绿色彩。

*触按色彩键钮，荧屏色彩如下依次循环变化：



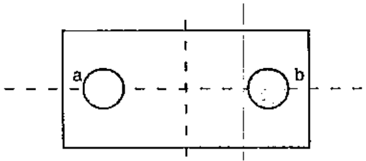


图2-1

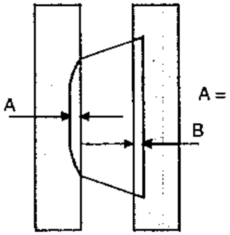


图2-2 A级着屏点(CRT右侧)

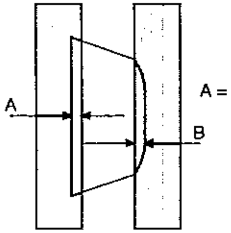


图2-3 A级着屏点(CRT左侧)

图2

可通过TEXT键钮和"R(红)、G(绿)、Cy(青)"键钮的触按直接转换为各单色显示的荧屏。

■ CONVERGENCE ADJUSTMENT

1. CONVERGENCE ADJ.(To be done after the purity adjustment.)

1. Receive the "Crosshatch Pattern" signal.
2. Using the remote controller, call NORMAL mode.

Static convergence

1. Turn the 4 - pole magnet to a proper opening angle in order to superpose the blue and red colours.
2. Turn the 6 - pole magnet to a proper opening angle in order to superpose the green colour over the blue and red colours.

Dynamic convergence

1. Adjust the convergence on the fringes of the screen in the following steps.
   - a) Fig. - a : Drive the wedge at point "a" and swing the deflection coil upward.
   - b) Fig. - b : Drive the wedge at point "a" and "b" and swing the deflection coil downward.
   - c) Fig. - c : Drive the "c" wedge deeper and swing the deflection coil rightward.
   - d) Fig. - d : Drive the "b" wedge deeper and swing the deflection coil leftward.
2. Fix all the wedges on the CRT and apply glass tape over them.
3. Apply lacquer to the deflection yoke lock screw, magnet unit (purity 4 - pole, 6 - pole magnets) and magnet unit lock screw.

Finally received the Red - only and Blue - only signals to make sure there is no other colours on the screen.

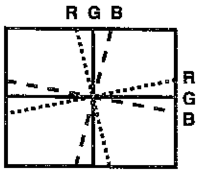


Fig. a

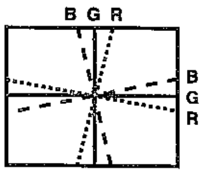


Fig. b

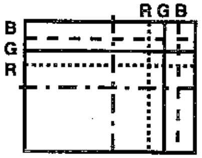


Fig. c

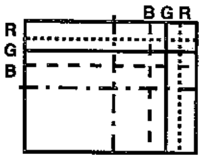


Fig. d

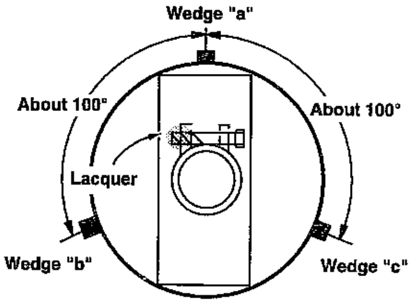


Figure 3

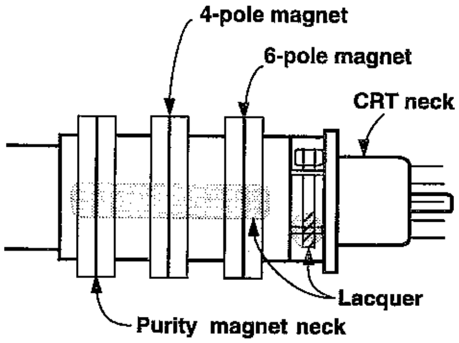


Figure 4

■ 画面聚焦度的调整

1.画面聚焦度的调整(此项调整必须在色彩纯度的调整完毕后进行。)

1.接收“棋盘格测试图案”信号。
2.通过遥控器呼出标准图像状态。

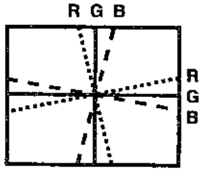
静聚焦度的调整：

1.调节4极聚焦磁铁的开角与转角，使蓝色线条与红色线条重叠。
2.调节6极聚焦磁铁的开角与转角，使绿色线条再与蓝、红色重叠线条重叠。

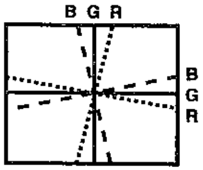
动聚焦度的调整：

1.按下述要求调节荧屏周边的聚焦度。
   - a)图a.所示的聚焦调节：通过插入调整楔“a”以及向上摆动偏转线圈加以调节。
   - b)图b.所示的聚焦调节：通过插入调整楔“a”和“b”以及向下摆动偏转线圈加以调节。
   - c)图c.所示的聚焦调节：通过深插调整楔“c”以及向右摆动偏转线圈加以调节。
   - d)图d.所示的聚焦调节：通过深插调整楔“b”以及向左摆动偏转线圈加以调节。
2.保持CRT之上三支调整楔的调节完了后的位置，用玻璃胶带固定之。
3.加封固胶于偏转线圈的固定螺丝、磁铁装置(由色彩纯度调节磁铁、4极聚焦磁铁以及6极聚焦磁铁构成)以及磁铁装置的固定螺丝，封固之。

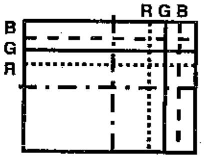
上记调整结束后，接收单色(红色/蓝色)信号，以及检查在荧屏上有无呈现其它颜色。



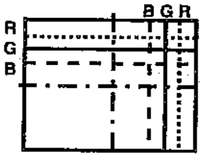
图a



图b



图c



图d

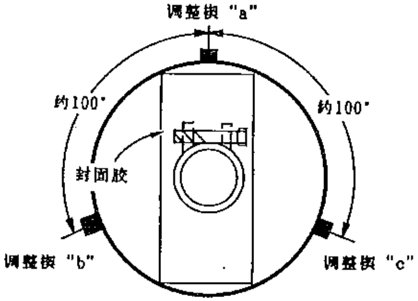


图3

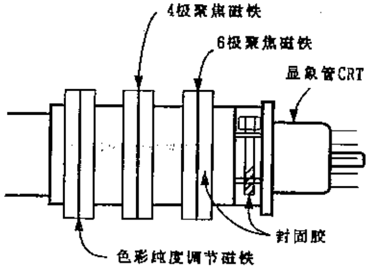


图4

CUT OFF , WHITE BALANCE, SUB - BRIGHT, & FOCUS ADJUSTMENT.

1. CRT Cut - OFF ADJ. (I^2C BUS CONTROL)

1. Switch TV to VIDEO MODE, Blue Back: OFF, Without Video Signal.
2. Connect the oscilloscope to TP851.
   (Use a 10:1 probe)
   Range: 500mV/div
   Sweep Time: 5ms/div
   Press "DC" mode
3. Using the remote controller, call NORMAL mode.
4. Adjust Screen VR so that the tip of signal reach 2.5Vdc ± 0.1Vdc.

* Before adjustment, make sure that this adjustment with the initial bus data "White Point (G)" & "White Point (B)" are 32.

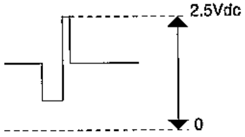


Figure 5

2. White Balance ADJ. (I^2C BUS CONTROL)

1. Receive the MONOSCOPE PATTERN signal.
2. Call the "BKGD" in SERVICE mode.
3. Adjust "White Point (G)", "White Point (B)" data to have a colour temperature of 12300k (White) Note.

Note : White Point (G) UP " 2 " KEY DOWN " 5 " KEY
White Point (B) UP " 3 " KEY DOWN " 6 " KEY
As the above data can be UP / DOWN.
#12300k x=272 y=275
#7500k x=300 y=310 (Minolta Colour Analyzer CA-100)

3. SUB- BRIGHT ADJ. (I^2C BUS CONTROL)

1. Receive the Crosshatch pattern Signal.
2. Call the "SUB BRI" in SERVICE mode.
3. Adjust the "SUB-BRI" bus data, so that the No. 2 line inside the window area will disappear.

Note: **Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of 1300 ~ 1500μA.(For 25RN1, the beam current is 1200 ~ 1300μA)**

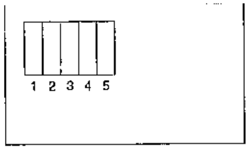


Figure 6

4. BEAM CURRENT CHECK

1. Receive the "Monoscope Pattern" Signal.
2. Press P-NORMAL key.
3. Connect the DC Milliammeter between TP601 (-) and TP602 (+). (Full Scale: 3.0 mA Range).
4. Beam current Must be 1400 ± 100μA.

5. FOCUS ADJ.

1. Receive the MONOSCOPE PATTERN signal.
2. Using the remote control, call NORMAL mode.
3. Adjust the FOCUS control so that the shaded area of screen be in optimal focus.

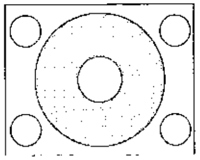


Figure 7

■ CRT截止、白色平衡、副亮度和焦点的调整

1.CRT截止的调整(I^2C总线控制)

1.改变TV状态为VIDEO状态，蓝色背景：OFF，无视频信号。
2.接示波器于TP851。
　(使用10：1的探针为宜)
　测试范围：500m V/段
　扫频时间：5毫秒/段
　选择“DC"状态
3.通过遥控器呼出标准图像状态。
4.调节荧屏VR，使信号波形的顶部幅值达至2.5Vdc ± 0.1Vdc的规定要求。

*在作此项调整之前，必须先将初始值的总线控制数据处于“White Point(G)和White Point(B)”，然后再检查其设定值是否为32。

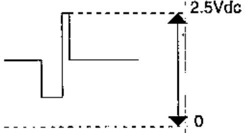


图5

2.白色平衡的调整(I^2C总线控制)

1.接收单像管图案信号。
2.在保养状态下呼出“BKGD”项目。
3.调节“White Point(G)”和“White Point(B)”的数据，以获得色温为12300K的白色。

注意：白色位置(绿色)的数据上移时：“2”键钮，下移时：“5”键钮
　　　白色位置(蓝色)的数据上移时：“3”键钮，下移时：“6”键钮
可进行上记数据的上移或下移工作。
　#12300K X=272 Y=275
　#7500K X=300 Y=310 (美能达色温计CA-100所测)

3.副亮度的调整(I^2C总线控制)

1.接收棋盘格测试图案信号。
2.在保养调整状态下呼出“SUB BRI"项目。
3.调节“SUB BRI”总线数据，使窗口内侧的第2线条消失。

注意：作此项调整之前，先用1300至1500μA(型号25RN1：使用1200至1300μA的电子束电流)的电子束电流预热显象管CRT 30分钟以上。

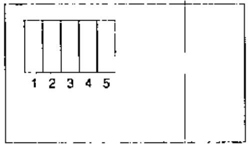


图6

4.电子束电流的检查

1.接收“单像管图案”信号。
2.触按标准图像键钮。
3.接直流毫安计于TP601(-)与TP602(+)之间。(测试范围：30mA)
4.必须将电子束电流调至1400 ± 100μA。

5.焦点的调整

1.接收单像管图案信号。
2.通过遥控器呼出标准图像状态。
3.调节焦点控制旋钮，使荧屏上的阴影部分达至最理想的焦点程度。

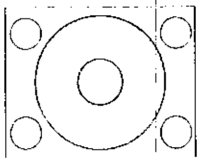


图7

HORIZONTAL, VERTICAL, DEFLECTION LOOP ADJUSTMENT.

1. V-SLOPE ADJ. (I^2C BUS CONTROL)

1. Receive the "MONOSCOPE PATTERN" signal.
2. Call the "V-SLOPE" in SERVICE mode.
3. Increase or decrease "V-SLOPE" by using Volume key so that the center line of picture matches with the edge of blanking line.

Note: SPEC: ±1 SCANNING LINE

2. V-SHIFT 50 AND V- SHIFT 60 (I^2C BUS CONTROL)

1. Receive the 50Hz "Monoscope Pattern" signal.
2. Call the "V-SIFT 50" in SERVICE mode.
3. Increase or decrease the "V-SIFT 50" by using Volume UP/DOWN key to adjust or align the screen center with the CRT's geometrical center.
4. Receive the 60 Hz "Monoscope Pattern" signal.
5. Call the "V-SIFT 60" in SERVICE mode.
6. Increase or decrease the "V-SIFT 60" by using Volume UP/DOWN key to adjust or align the screen center with the CRT's geometrical center.

Note: SPEC: ±2mm

3. V-AMP (I^2C BUS CONTROL)

1. Receive the "MONOSCOPE PATTERN" signal.
2. Call the "V-AMP" in SERVICE mode.
3. Increase or decrease the "V-AMP" by using the volume UP/DOWN key to adjust the Vertical size until it is 8.5% overscan.

Note: OVER SCAN: 8.5% ±1.5 %

4. H-SHIFT 50 AND H-SHIFT 60 (I^2C BUS CONTROL)

1. Receive the 50Hz "Monoscope Pattern" signal.
2. Call the "H-SIFT 50" IN SERVICE MODE.
3. Increase or decrease the "H-SIFT 50" by using the Volume UP/DOWN key to adjust or align the left, and right sides of screen are equal overscan size.
4. Receive the 60Hz "Monoscope Pattern" signal.
5. Call the "H-SIFT 60" IN SERVICE MODE.
6. Increase or decrease the "H-SIFT 60" by using the Volume UP/DOWN key to adjust or align the left and right sides of screen are equal overscan size.

Note: SPEC: ±2mm

5. WIDTH (EW) (I^2C BUS CONTROL) (29RN1 only)

1. Receive the "MONOSCOPE PATTERN" signal.
2. Call the "WIDTH" in SERVICE mode.
3. Increase or decrease the "WIDTH" by using Volume UP/DOWN key until the H-SIZE overscan is 8.5%.

Note: SPEC: 8.5 % ±1.5%

水平、垂直同步电路和偏转环形电路的调整

1.垂直倾斜的调整（I^2C总线控制)

1. 接收“单像管图案”信号。
2. 在保养调整状态下呼出“V-SLOP"项目。
3. 用音量增加/减少键钮来增加或减少“V-SLOP”数据，使图像的中央线条与消隐线条边缘相配。

注意：规定要求：±1扫描线条

2.垂直偏移50和垂直偏移60的调整(I^2C总线控制)

1. 接收50Hz“单像管图案”信号。
2. 在保养调整状态下呼出“V-SIFT50"项目。
3. 用音量增加/减少键钮来增加或减少“V-SIFT50”数据，使荧屏中心与CRT的几何中心对齐而进行调整。
4. 接收60Hz“单像管图案”信号。
5. 在保养调整状态下呼出“V-SIFT60”项目。
6. 用音量增加/减少键钮来增加或减少“V-SIFT60”数据，使荧屏中心与CRT的几何中心对齐而进行调整。

注意：规定要求：±2mm

3.垂直幅值的调整(I^2C总线控制)

1. 接收“单像管图案”信号。
2. 在保养调整状态下呼出“V-AMP”项目。
3. 用音量增加/减少键钮来增加或减少“V~AMP”数据而进行垂直尺寸的调整，直至获得8.5%的过扫描为止。

注意：过扫描：8.5%±1.5%

4.水平偏移50和水平偏移60的调整(I^2C总线控制)

1. 接收50Hz“单像管图案”信号。
2. 在保养调整状态下呼出“H-SIFT50”项目。
3. 用音量增加/减少键钮来增加或减少“H-SIFT50”数据而进行调整，使荧屏的左右端与过扫描的幅度一致。
4. 接收60Hz“单像管图案”信号。
5. 在保养调整状态下呼出“H-SIFT60”项目。
6. 用音量增加/减少键钮来增加或减少“H-SIFT60”数据而进行调整，使荧屏的左右端与过扫描的幅度一致。

注意：规定要求：±2mm

5.幅度(EW)的调整(I^2C总线控制)(仅限型号29RN1)

1. 接收“单像管图案”信号。
2. 在保养调整状态下呼出“WIDTH”项目。
3. 用音量增加/减少键钮来增加或减少“WIDTH”数据，直至水平尺寸的过扫描达至8.5%为止。

注意：规定要求：8.5%±1.5%

■ HORIZONTAL, VERTICAL, DEFLECTION LOOP ADJUSTMENT. (Continued)

6. PARA (EW) (I^2C BUS CONTROL) (29RN1 only)

1. Receive the "CROSSHATCH PATTERN" signal.
2. Call the "PARA" in SERVICE mode.
3. Increase or decrease the "PARA" by using Volume UP/DOWN key until the Vertical lines are straight. (2nd Line of both L & R) (This adjustment couldn't adjust the top and bottom of the lines).

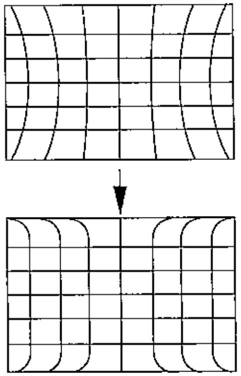


Figure 8

7. CORNER (EW) (I^2C BUS CONTROL) (29RN1 only)

1. Receive the "CROSSHATCH PATTERN" signal.
2. Call the "CORNER" in SERVICE mode.
3. Increase or decrease the "CORNER" by using Volume UP/DOWN key until the vertical lines are straight at the top and bottom of the lines. (2nd Line of both L & R)
4. Adjustment with CORNER: STRAIGHTEN THE TOP AND BOTTOM OF THE VERTICAL LINES AFTER PARA ADJUSTMENT.

8. TRAPE (EW) (I^2C BUS CONTROL) (29RN1 only)

1. Receive "CROSSHATCH PATTERN" signal.
2. Call the "TRAPE" in SERVICE mode.
3. Increase or decrease the "TRAPE" by using the Volume UP/DOWN key until all the vertical lines are straight and aren't slanting to the left or right.
4. Adjustment with TRAPE: THIS ADJUSTMENT IS INDEPENDENT UPON OTHER ADJUSTMENT.

Note: Trapezoid: 1.5% Max

9. S-COR (I^2C BUS CONTROL)

1. Receive the "CROSSHATCH PATTERN" signal.
2. Call the "S-COR" IN SERVICE mode.
3. Increase or decrease the "S-COR" by using the Volume UP/DOWN key to get the best LINEARITY.
4. Adjustment with S-COR: OVERALL VERTICAL LINEARITY.
5. Readjust the "V-AMP" to make the overscan 8.5%. Readjust or align "V-SIFT" to match the screen center with the CRT's geometrical center.

Note: V-LINEARITY: ± 5% Max

■ 水平、垂直同步电路和偏转环形电路的调整（接上页）

6.抛物面(EW)的调整(I^2C总线控制)(仅限型号29RN1)

1.接收“棋盘格测试图案”信号。
2.在保养调整状态下呼出“PARA"项目。
3.用音量增加/减少键钮来增加或减少“PARA”数据，直至垂直线成一直线为止。(左右两端的第2条垂直线条)(此项调整不能调整顶部和底部的线条)

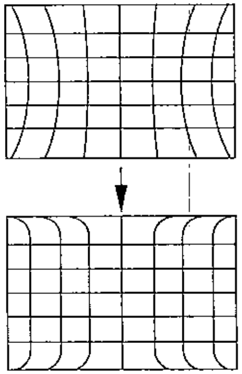


图8

7.角部(EW)的调整(I^2C总线控制)(仅限型号29RN1)

1.接收“棋盘格测试图案”信号。
2.在保养调整状态下呼出“CORNER”项目。
3.用音量增加/减少键钮来增加或减少“CORNER"数据，直至顶部和底部的垂直线条成一直线为止。(左右两端的第2条垂直线条)
4.此项调整必须在抛物面的调整完毕后进行。

8.梯形失真(EW)的调整(I^2C总线控制)(仅限型号29RN1)

1.接收“棋盘格测试图案”信号。
2.在保养调整状态下呼出“TRAPE”项目。
3.用音量增加/减少键钮来增加或减少“TRAPE”数据，使所有的垂直线条成一直线，并使左右两端处没有倾斜现象。
4.此项调整与其他调整无关系。

注意：梯形失真：最大1.5%

9.同步校正(I^2C总线控制)

1.接收“棋盘格测试图案”信号。
2.在保养调整状态下呼出“S-COR”项目。
3.用音量增加/减少键钮来增加或减少“S-COR”数据，以获得最佳线性度。
4.通过S-COR的调整进行所有垂直线性度的调整。
5.重调“V-AMP”数据，使过扫描达至8.5%。重调“V-SIFT”数据，使荧屏中心与CRT的几何中心对齐。

注意：垂直线性度：最大±5%

■ PAL CHROMA ADJUSTMENT

1. SUB COLOUR ADJ. (I^2C BUS CONTROL)

1. Receive the "PAL Color Bar" signal.
2. Using remote controller, call NORMAL mode.
3. Using remote controller, call NORMAL mode.
   Range : 20 V/Div (Using 10:1 Probe)
   Sweep : 20 µ sec/Div
4. Using the R/C call "SUB COL" adjustment mode. Adj SUB-COL bus data, so that the 75% White & Red portions of PAL Color Bar be at the same level.
5. Clear the adjustment mode.

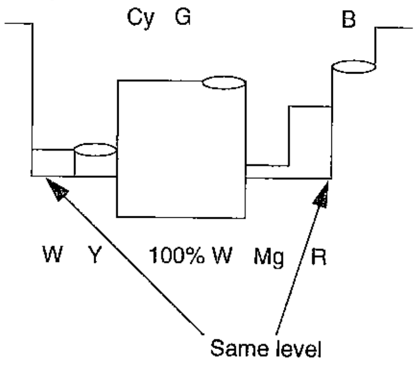


Figure 9

■ NTSC CHROMA ADJUSTMENT

1. SUB-TINT (I^2C BUS CONTROL)

1. Receive the NTSC 3.58 Colour Bar signal.
2. Connect the oscilloscope to TP853.
   Range : 500mV/Div
   Sweep time : 20 µ sec/Div
3. Set the "SUB-TIN" mode at service mode. Adjust the "SUB TIN" bus data so that the SECOND AND THIRD portions of the colour Bar are SAME level shown in *Figure 10*.

Note: Be sure that AV TINT set to 00 at SERVICE mode.

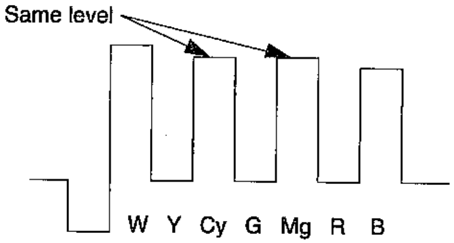


Figure 10

■ PAL制式色度信号电路的调整

1.副彩色的调整(I^2C总线控制)

1.接收“PAL制式彩条”信号。
2.通过遥控器呼出标准图像状态。
3.通过遥控器呼出标准图像状态。
　测试范围：20V/段　(使用10：1的探针)
　扫频时间：20微秒/段
4.通过遥控器呼出“SUB COL"调整项目，然后，调节“SUB COL”总线数据，使PAL制式彩条信号中的75%白色部分的信号电平与红色部分的信号电平一致。
5.取消此项调整状态的设定。

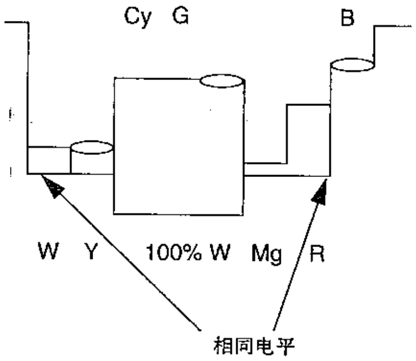


图9

■ NTSC制式色度信号电路的调整

1.副色调的调整(I^2C总线控制)

1.接收NTSC3.58制式彩条信号。
2.接示波器于TP853。
　测试范围：500mV/段
　扫频时间：20微秒/段
3.在保养调整状态下呼出“SUB TIN”项目，然后调节“SUB TIN”总线数据，使彩条信号中的第2与第3部分的电平一致。

注意：在保养调整状态下，
　　　检查AV TIN数据是否设定于00。

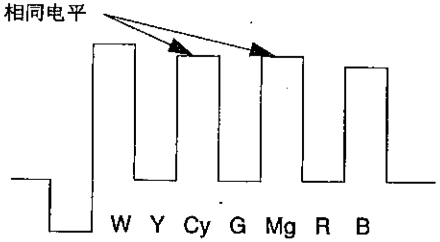


图10

A/V INPUT/OUTPUT CHECKING

1. VIDEO & AUDIO OUTPUT CHECKING

1. Receive the "PAL COLOUR BAR" signal (100% White Color Bar Sound 400 Hz 100% Mod)
2. Terminate the Video output with a 75 ohm impendence. Make sure the output is as specified (1.0 Vp-p ± 3 dB)
3. Terminate the Audio output with a 10 Kohm impendence. Make sure the O/P is as specified (1.76 Vp-p ± 3 dB).

2. VIDEO & AUDIO INPUT CHECKING

1. Using the TV/AV key on the remote controller, make sure that the modes change in order of TV, AV1, AV2 & TV again and that the video & audio output are according to the input terminal for each mode.

3. AUTO SELECT

1. Connect Video signal to FRONT AV (AV2).
2. Make sure Channel switch from other channel to AV2 automatically.

PROTECTOR OPERATION CHECKING

1. BEAM PROTECTOR

1. Receive the "MONOSCOPE PATTERN" signal.
2. Set CONTRAST MAX.
3. Set BRIGHT MAX.
4. While the R or B or G Cathode short to ground, make sure the protector ON and switch to standby mode.

2. H, V PROTECTOR

1. Receive the "MONOSCOPE PATTERN" signal.
2. Connect output of Bias Box to D601 cathode (D608).
3. Set voltage of Bias Box to 20V and make sure the protector is work.

3. OTHER PROTECTOR

1. Once finish rectified Electrolytic Capacitor short testing in + B line, check all possible damaged components on +B line.

音频/视频信号输入、输出的检查

1.音频/视频信号输入、输出的检查

1.接收“PAL制式彩条”信号。(100%白色彩条,声音：400Hz、100%调制）.
2.检查视频信号输出端的电阻为75Ω时的信号强度是否满足标准值的1.0Vp-p±3dB的规定要求。
3.检查音频信号输出端的电阻为10kΩ时的信号强度是否满足标准值的1.76Vp-p±3dB的规定要求。

2.视频和音频信号输入的检查

1.相继触按遥控器上的电视与录象切换(TV/AV)键，检查电视机信号输入频道是否按电视频道(TV)，录象1频道(AV1)、录象2频道(AV2)以及电视频道(TV)的顺序循环切换。并且，检查每一设定时的视频信号以及音频信号输出是否正常地与设定输入频道对应。

3.自动选择功能的检查

1.向FRONT AV(AV2)插孔输入视频信号。
2.检查频道是否由其它频道自动地转换为AV2频道。

保护电路性能的检查

1.电子束保护电路

1.接收“单像管图案”信号。
2.设对比度控制于最大。
3.设亮度控制于最大。
4.在短接R(红色)、B(蓝色)或G(绿色)阴极时，检查电子束保护电路是否被激励动作，电视机是否置于准备状态。

2.高压保护电路

1.接收“单像管图案”信号。
2.接偏压器的输出端于D601阴极(D608)。
3.调偏压器电压为20V，检查这时的高压保护电路是否被激励动作。

3.其它保护电路

1.在＋B线路上进行电解电容器的短接试验后，检查有可能受损伤或损坏的＋B线路上的所有电路元件。

CHECKING OPERATION (VIDEO & AUDIO)

NO	CHECKING POINT	SETTING / CONDITION	WAVEFORM OR OTHERS
1	CONTRAST	① Receive the "MONOSCOPE PATTERN" signal. ② Press the CH UP/DOWN key for PICTURE control setting with R/C, select the CONTRAST. ③ Increase or decrease the CONTRAST by using the VOLUME UP / DOWN key. ④ Check whether the CONTRAST is OK or not.	
2	COLOUR	① Receive the "COLOUR BAR PATTERN" signal. ② Press the CH UP / DOWN key for PICTURE control setting with the R/C, select the COLOUR. ③ Increase or decrease the COLOUR by using the VOLUME UP / DOWN key. ④ Check whether the COLOUR is OK or not.	
3	BRIGHTNESS	① Receive the "MONOSCOPE PATTERN" signal. ② Press the CH UP / DOWN key for PICTURE control setting with the R/C, select the BRIGHTNESS. ③ Increase or decrease the BRIGHTNESS by using the VOLUME UP / DOWN key. ④ Check whether the BRIGHTNESS is OK or not.	
4	TINT	① Receive the "NTSC COLOUR BAR PATTERN" signal. ② Press the CH UP / DOWN key for PICTURE control setting with the R/C, select the TINT. ③ Increase or decrease the TINT by using the VOLUME UP / DOWN key. ④ Check whether the TINT is OK or not.	
5	SHARPNESS	① Receive the "MONOSCOPE PATTERN" signal. ② Press the CH UP / DOWN key for PICTURE control setting with the R/C, select the SHARPNESS. ③ Increase or decrease the SHARPNESS by using the VOLUME UP / DOWN key. ④ Check whether the SHARPNESS is OK or not.	
6	WHITE TEMP	① Receive the "MONOSCOPE PATTERN" signal. ② Press the CH UP / DOWN key for PICTURE control setting with the R/C, select WHITE TEMP. ③ Increase or decrease the WHITE TEMP by using the VOLUME UP / DOWN key. ④ Check whether the WHITE TEMP is OK or not.	
7	NORMAL	① Receive the "COLOUR BAR PATTERN" signal. ② Press NORMAL key to set the picture condition to normal . When the NORMAL key is pressed, all the initial picture control settings will be preset to normal setting as listed below: Contrast :MAX. Colour :CENTER Brightness :CENTER Tint :CENTER Sharpness :CENTER	If nothing is display mean contrast, colour, bright, tint, sharpness are all in normal setting.

电路性能的检查（图象和声音）

编号	调整点	设定位置及其条件	波形及其他
1	对比度	① 接收“单像管图案”信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有图像调节功能)，以选择对比度调整状态。 ③ 触按音量增加/减少键钮来增加或减少对比度数据。 ④ 检查对比度是否符合规定要求。	
2	彩色	① 接收“彩条图案”信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有图像调节功能)，以选择彩色调整状态。 ③ 触按音量增加/减少键钮来增加或减少彩色数据。 ④ 检查彩色是否符合规定要求。	
3	亮度	① 接收“单像管图案”信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有图像调节功能)，以选择亮度调整状态。 ③ 触按音量增加/减少键钮来增加或减少亮度数据。 ④ 检查亮度是否符合规定要求。	
4	色调	① 接收“NTSC制式彩条图案”信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有图像调节功能)，以选择色彩调整状态。 ③ 触按音量增加/减少键钮来增加或减少色彩数据。 ④ 检查色彩是否符合规定要求。	
5	鲜明度	① 接收“单像管图案”信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有图像调节功能)，以选择鲜明度调整状态。 ③ 触按音量增加/减少键钮来增加或减少鲜明度数据。 ④ 检查鲜明度是否符合规定要求。	
6	白色温度	① 接收“单像管图案”信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有图像调节功能)，以选择白色温度调整状态。 ③ 触按音量增加/减少键钮来增加或减少白色温度数据。 ④ 检查白色温度是否符合规定要求。	

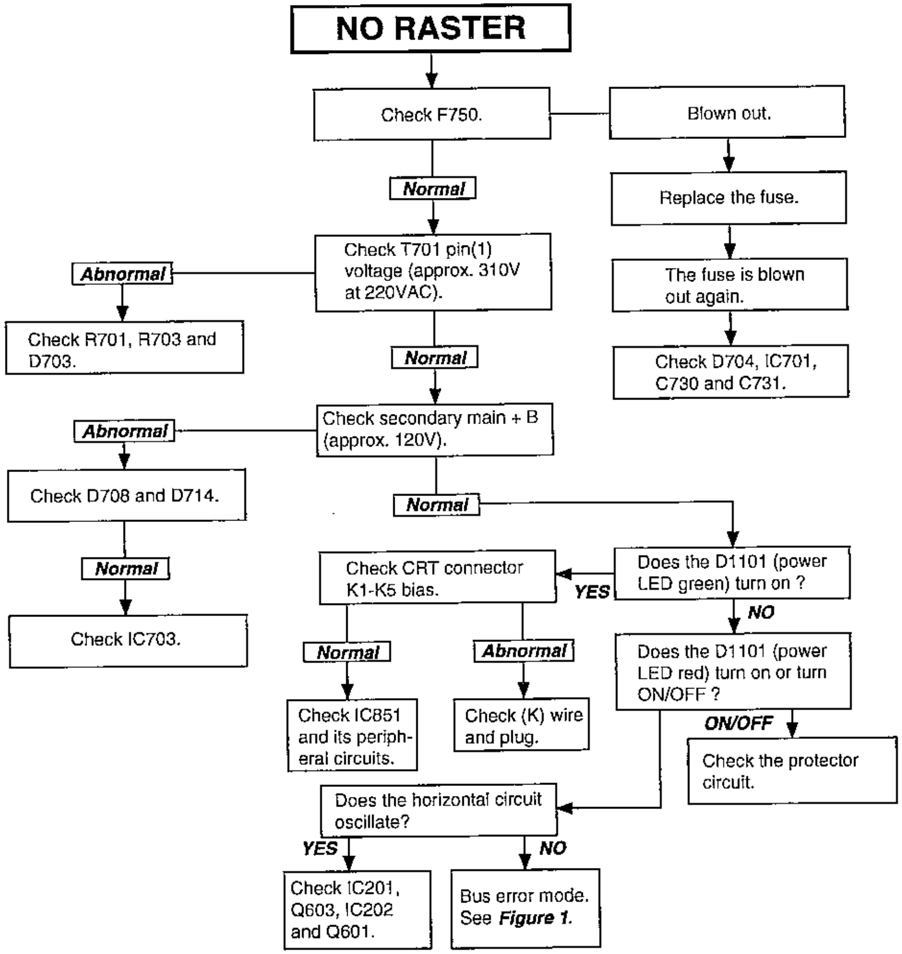
NO	CHECKING POINT	SETTING / CONDITION	WAVEFORM OR OTHERS
8	CH COLOUR DISPLAY	All Ch (1-99) will have an OSD display of the channel number in green colour under AFT ON condition.	
9	BASS	① Receive the MUSIC SOUND SIGNAL. ② Press the CH UP / DOWN key for SOUND control setting with the R/C, select the BASS. ③ Increase or decrease the BASS by using the VOLUME UP / DOWN key. ④ Check whether the BASS (low frequency) is OK or not.	
10	MIDDLE	① Receive the MUSIC SOUND SIGNAL. ② Press the CH UP / DOWN key for SOUND control setting with the R/C, select the MIDDLE. ③ Increase or decrease the MIDDLE by using the VOLUME UP / DOWN key. ④ Check whether the MIDDLE (MIDDLE frequency) is OK or not.	
11	TREBLE	① Receive the MUSIC SOUND SIGNAL. ② Press the CH UP / DOWN key for SOUND control setting with the R/C, select the TREBLE. ③ Increase or decrease the TREBLE by using the VOLUME UP / DOWN key. ④ Check whether the TREBLE (HIGH frequency) is OK or not.	
12	BALANCE	① Receive the MUSIC SOUND SIGNAL. ② Press the CH UP / DOWN key for SOUND control setting with the R/C, select the BALANCE. ③ Increase or decrease the left or right speaker BALANCE by using the VOLUME UP / DOWN key. ④ Check whether the BALANCE of left and right speakers is OK or not.	
13	NORMAL	① Receive the MUSIC SOUND SIGNAL. ② Press NORMAL key to set the sound condition to normal . When the NORMAL key is pressed, all the initial sound control settings will be preset to normal setting as listed below: BASS :CENTER MIDDLE :CENTER TREBLE :CENTER BALANCE :CENTER	
14	SURROUND	① Receive the MUSIC SOUND SIGNAL. ② Press the CH UP / DOWN key for SURROUND control setting with the R/C. ③ Press Volume Up to switch Surround Mode as follows, MOVIE/DISCO/POP/ROCK/CLASSIC/SPORTS/SIMULATED/OFF. ④ Make sure each mode is working properly.	

编号	调整点	设定位置及其条件	波形及其他
7	标准图象	① 接收“彩条图案”信号。 ② 触按标准键钮，以选择图像标准状态。触按标准键钮时，出厂时设定的所有图像调节项目被预设而返回至标准设定状态。 对比度 ：最大 色调 ：中心 彩色 ：中心 鲜明度 ：中心 亮度 ：中心	在荧屏上无显示内容时，对比度、彩色、亮度、色彩以及鲜明度均处于标准设定状态。
8	频道代号表示色	在AFT ON状态下，所有(1～99)频道代号的表示色均呈现绿色。	
9	低音	① 接收音乐信号。 ② 触按遥控器上的频道上移/下移键钮、(该键钮具有声音调节功能)，以选择低音调整状态。 ③ 触按音量增加/减少键钮来增加或减少低音数据。 ④ 检查低音(低域频道)是否符合规定要求。	
10	中音	① 接收音乐信号。 ② 触按遥控器上的频道上移/下移键钮、(该键钮具有声音调节功能)，以选择中音调整状态。 ③ 触按音量增加/减少键钮来增加或减少中音数据。 ④ 检查中音(中域频率)是否符合规定要求。	
11	高音	① 接收音乐信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有声音调节功能)，以选择高音调整状态。 ③ 触按音量增加/减少键钮来增加或减少高音数据。 ④ 检查高音(高域频率)是否符合规定要求。	
12	平衡	① 接收音乐信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有声音调节功能)，以选择平衡调整状态。 ③ 触按音量增加/减少键钮来增加或减少左右侧扬声器的平衡数据。 ④ 检查左右侧扬声器的平衡是否符合规定要求。	

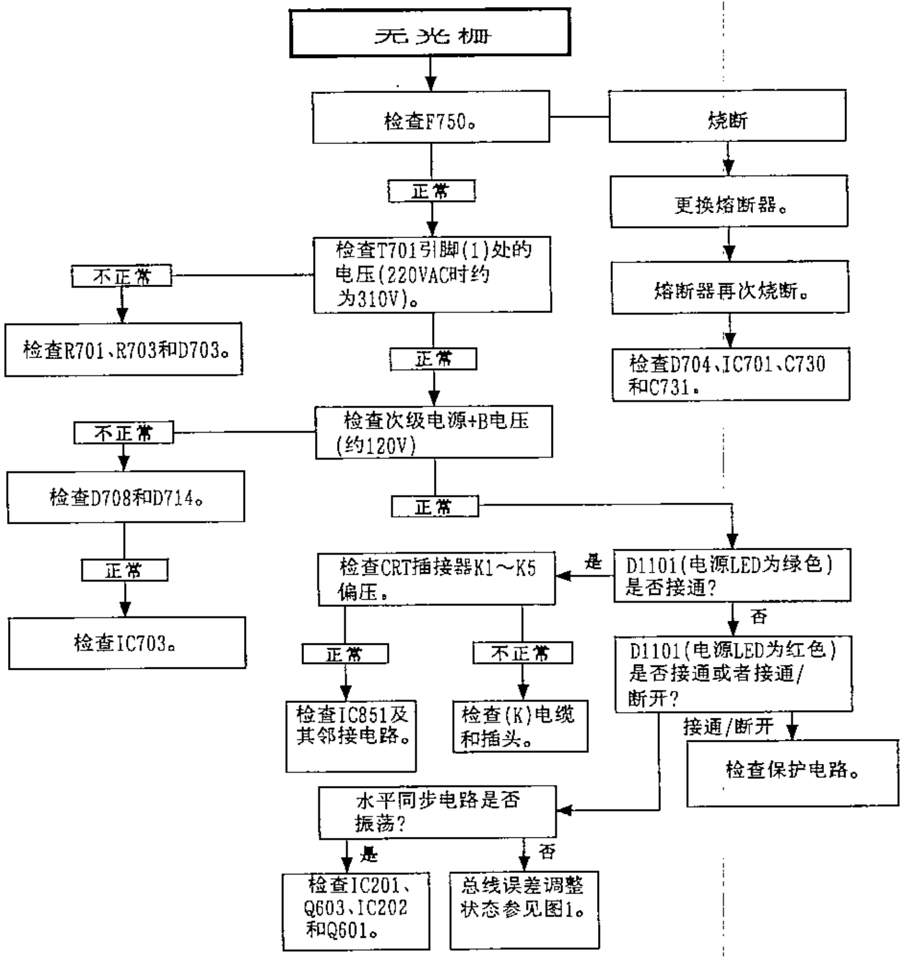
NO.	CHECKING POINT	SETTING / CONDITION	WAVEFORM OR OTHERS
15	COLOUR SYSTEM	① Receive the "PAL COLOUR BAR PATTERN" signal. Press the SYSTEM key to set the COLOUR SYSTEM MODE to AUTO mode. Check whether the colour of the PAL Colour Bar signal is OK or not. ② Receive the "NTSC 4.43 COLOUR BAR" signal. Press the SYSTEM key to set the COLOUR SYSTEM mode to AUTO mode. Check whether the colour of the N4.43 Colour Bar signal is OK or not. ③ Receive the "NTSC 3.58 COLOUR BAR" signal. Press the SYSTEM key to set the COLOUR SYSTEM mode to AUTO mode. Check whether the colour of the N3.58 Colour Bar signal is OK or not.	
16	FUNCTION	① Press FUNCTION key to select each mode as follows, SAVE/ AV SELECT/ NR/ BLUE BACK/ OSD. ② Press Volume Up to switch each mode, make sure each mode is working properly.	
17	NOISE MUTE CHECKING	① Receive "PAL COLOUR BAR" signal. ② Turn up the volume control to maximum, make sure the sound is heard from the speakers. Then put the unit in no signal state. ③ Be sure that the sound mute is effective. ④ Finally turn down the volume of CTV to minimum.	

编号	调整点	设定位置及其条件	波形及其他
13	标准	① 接收音乐信号。 ② 触按标准键钮，以选择声音标准状态。触按标准键钮时，出厂时设定的所有声音调节项目被预设而返回至标准设定状态。 低音　：中心 中音　：中心 高音　：中心 平衡　：中心	
14	环绕立体声	① 接收音乐信号。 ② 触按遥控器上的频道上移/下移键钮(该键钮具有环绕立体声调节功能)。 ③ 持续触按音量增加键钮，环绕立体声设定状态就按MOVIE/DISCO/POP/ROCK/CLASSIC/SPORTS/SIMULATED/OFF之顺序变化。 ④ 检查各种设定状态是否正确地进行动作。	
15	彩色制式	① 接收“PAL制式彩条图案”信号。触按彩色制式选择键钮，以选择自动调整状态。检查这时的PAL制式彩条信号是否正常。 ② 接收“NTSC4.43制式彩条图案”信号。触按彩色制式选择键钮，以选择自动调整状态。检查这时的NTSC4.43制式彩条信号是否正常。 ③ 接收“NTSC3.58制式彩条图案”信号。触按彩色制式选择键钮，以选择自动调整状态。检查这时的NTSC3.58制式彩条信号是否正常。	
16	功能	① 触按功能键钮，并按SAVE/AV SELECT/NR/BLUE BACK/OSD之顺序选择各个设定状态。 ② 触按音量增加键钮，并按上列顺序改变各个设定状态。检查这时的各个设定状态是否正常地进行工作。	
17	噪声抑制功能的检查	① 接收“PAL制式彩条”信号。 ② 设音量旋钮于最大位置以检查扬声器是否发出声音。然后设定于无信号接收状态。 ③ 这时，确认噪声抑制功能应动作。 ④ 最后，设CTV的音量旋钮于最小程度。	

TROUBLESHOOTING TABLE


NO RASTER
Check F750.
Blown out.
Replace the fuse.
The fuse is blown out again.
Check D704, IC701, C730 and C731.
Normal
Check T701 pin(1) voltage (approx. 310V at 220VAC).
Abnormal
Check R701, R703 and D703.
Normal
Check secondary main + B (approx. 120V).
Abnormal
Check D708 and D714.
Normal
Check IC703.
Normal
Does the D1101 (power LED green) turn on ?
YES
Check CRT connector K1-K5 bias.
NO
Does the D1101 (power LED red) turn on or turn ON/OFF ?
ON/OFF
Check the protector circuit.
Normal
Check IC851 and its peripheral circuits.
Abnormal
Check (K) wire and plug.
Does the horizontal circuit oscillate?
YES
Check IC201, Q603, IC202 and Q601.
NO
Bus error mode. See Figure 1.

故障检修流程图



TROUBLESHOOTING TABLE (Continued)

If bus error happen, the LED RED (pin (30) of IC1001 low) indicator starts flashing and the power is turned off. The power key is still effective.

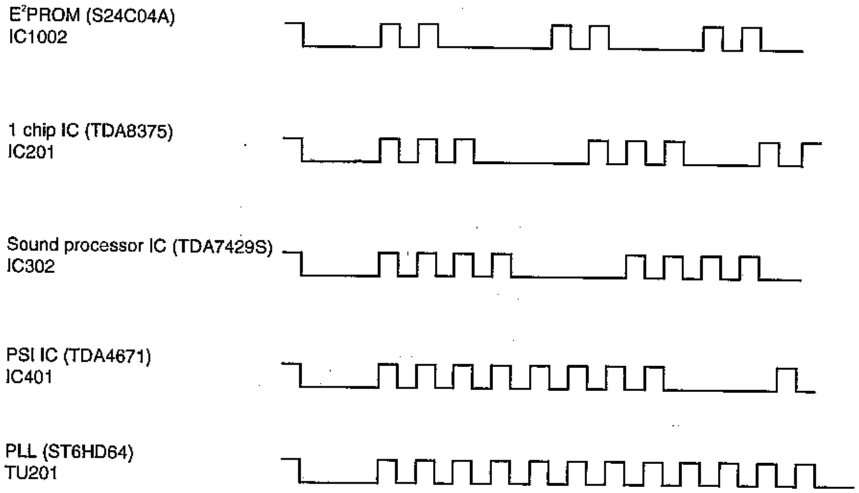


Figure 1

故障检修流程图（接上页）

发生总线误差时，LED红色(IC1001(低电平)的引脚(30))指示灯开始闪动，与其同时，关闭电源开关。此时，电源键钮应为有效。

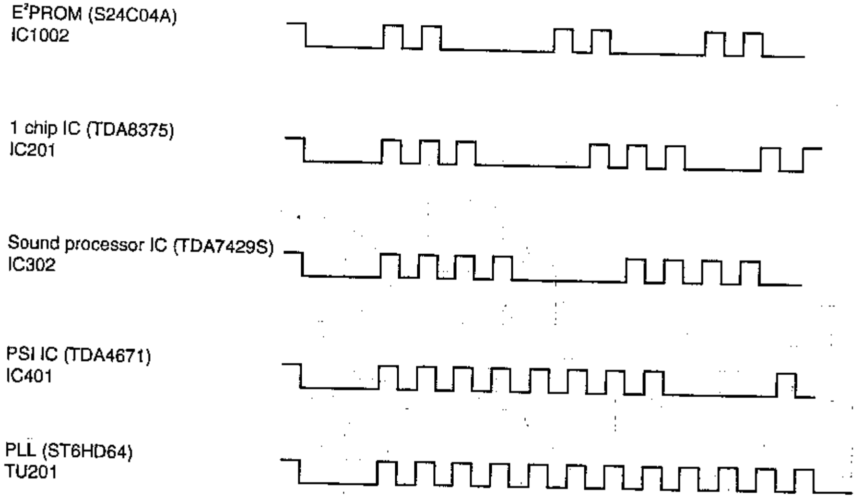
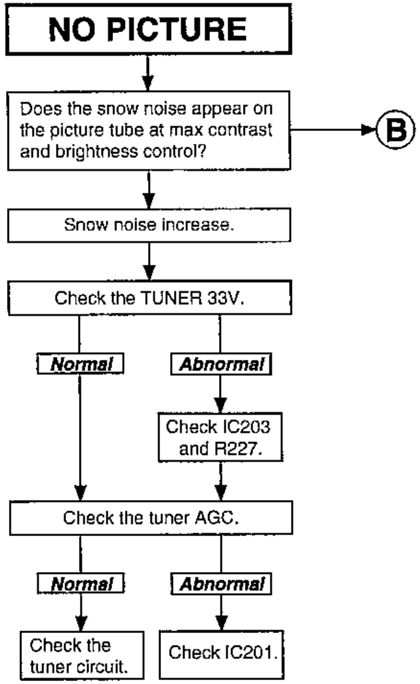
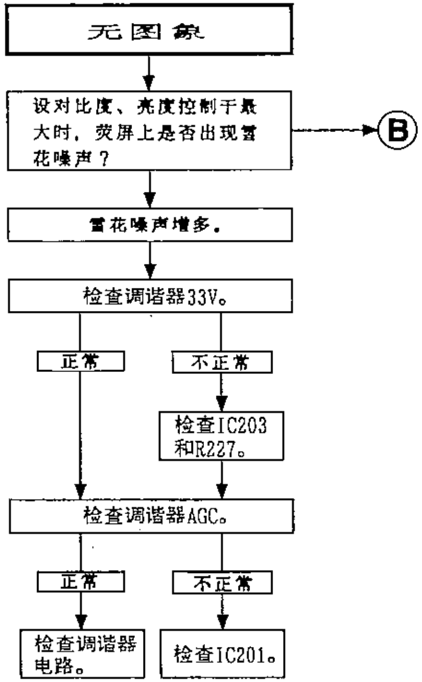


图1

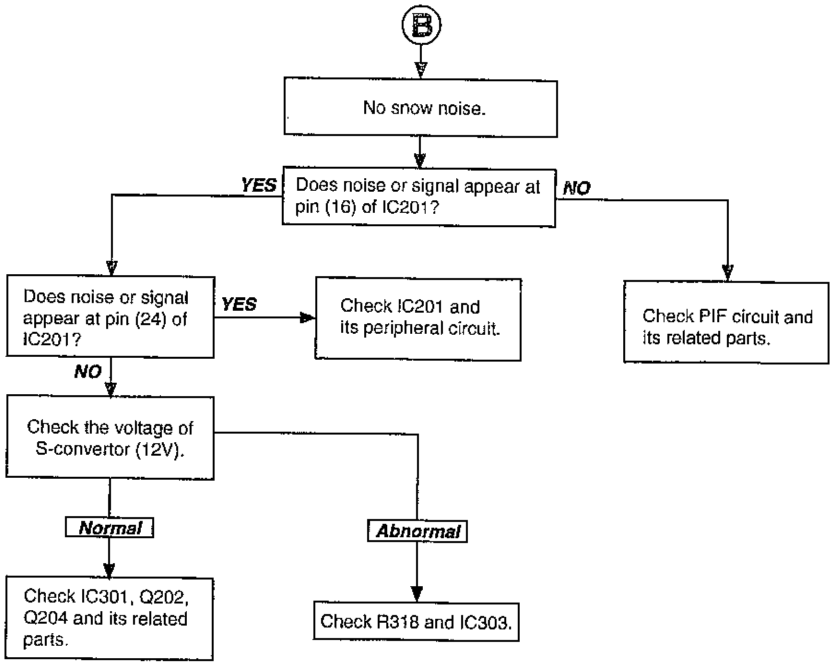
TROUBLESHOOTING TABLE (Continued)



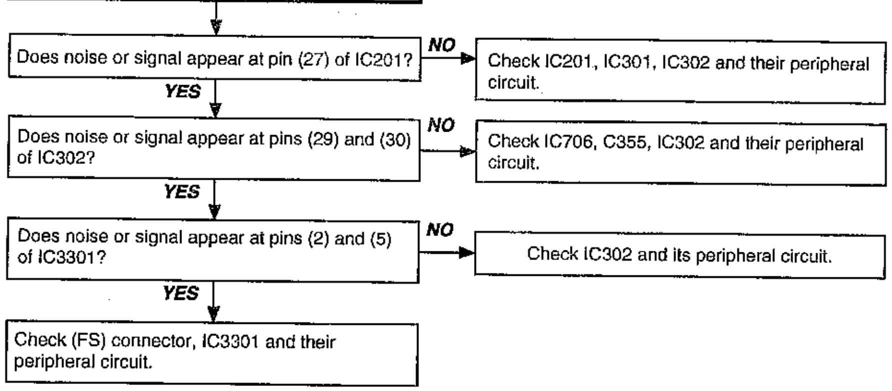
故障检修流程图　（接上页）



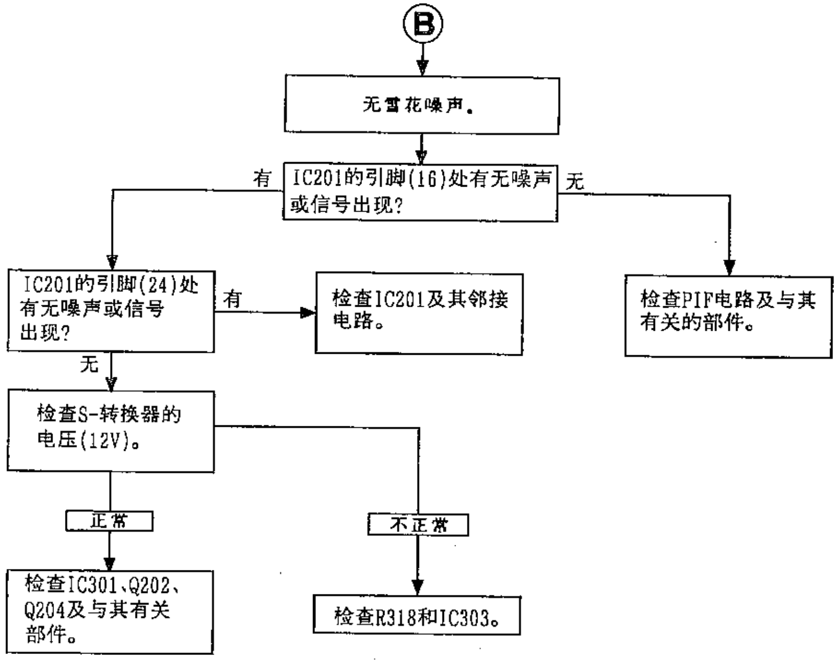
TROUBLESHOOTING TABLE (Continued)


B
No snow noise.
Does noise or signal appear at pin (16) of IC201?
YES
NO
Does noise or signal appear at pin (24) of IC201?
YES
Check IC201 and its peripheral circuit.
Check PIF circuit and its related parts.
NO
Check the voltage of S-convertor (12V).
Normal
Abnormal
Check IC301, Q202, Q204 and its related parts.
Check R318 and IC303.

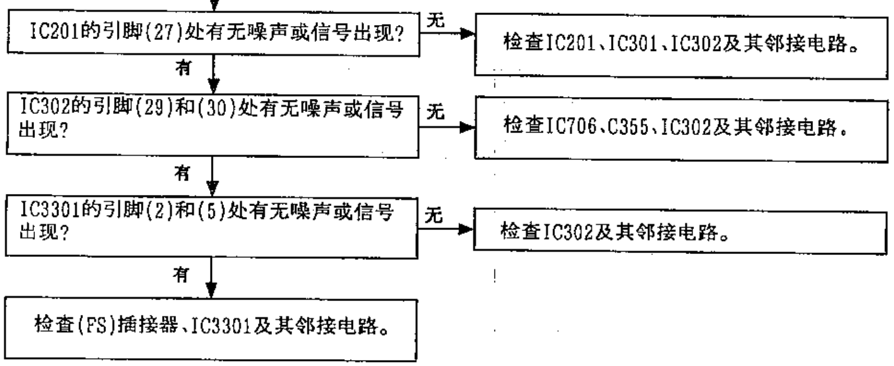
NO SOUND


Does noise or signal appear at pin (27) of IC201?
NO
Check IC201, IC301, IC302 and their peripheral circuit.
YES
Does noise or signal appear at pins (29) and (30) of IC302?
NO
Check IC706, C355, IC302 and their peripheral circuit.
YES
Does noise or signal appear at pins (2) and (5) of IC3301?
NO
Check IC302 and its peripheral circuit.
YES
Check (FS) connector, IC3301 and their peripheral circuit.

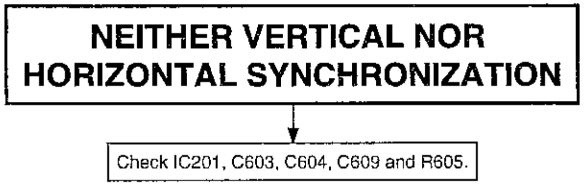
故障检修流程图（接上页）

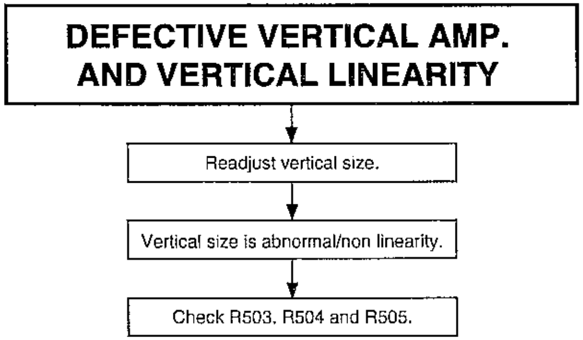

B
无雪花噪声。
IC201的引脚(16)处有无噪声或信号出现?
有
无
IC201的引脚(24)处有无噪声或信号出现?
有
检查IC201及其邻接电路。
检查PIF电路及与其有关的部件。
无
检查S-转换器的电压(12V)。
正常
不正常
检查IC301、Q202、Q204及与其有关部件。
检查R318和IC303。

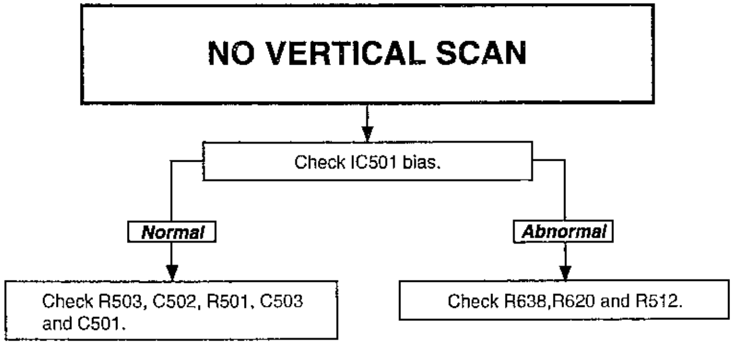
无声音


IC201的引脚(27)处有无噪声或信号出现?
无
检查IC201、IC301、IC302及其邻接电路。
有
IC302的引脚(29)和(30)处有无噪声或信号出现?
无
检查IC706、C355、IC302及其邻接电路。
有
IC3301的引脚(2)和(5)处有无噪声或信号出现?
无
检查IC302及其邻接电路。
有
检查(FS)插接器、IC3301及其邻接电路。

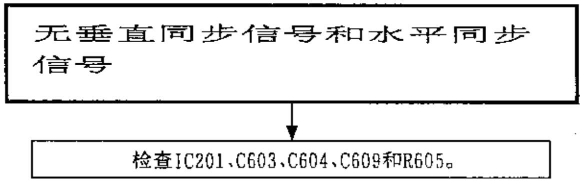
TROUBLESHOOTING TABLE (Continued)

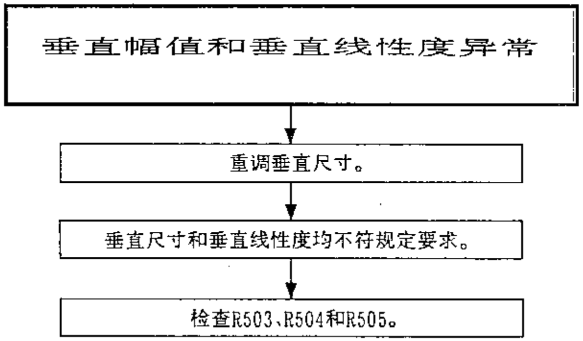

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION
Check IC201, C603, C604, C609 and R605.

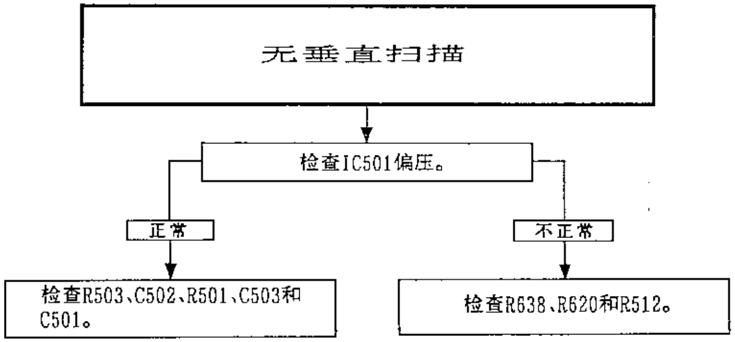

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY
Readjust vertical size.
Vertical size is abnormal/non linearity.
Check R503, R504 and R505.


NO VERTICAL SCAN
Check IC501 bias.
Normal
Abnormal
Check R503, C502, R501, C503 and C501.
Check R638,R620 and R512.

故障检修流程图（接上页）

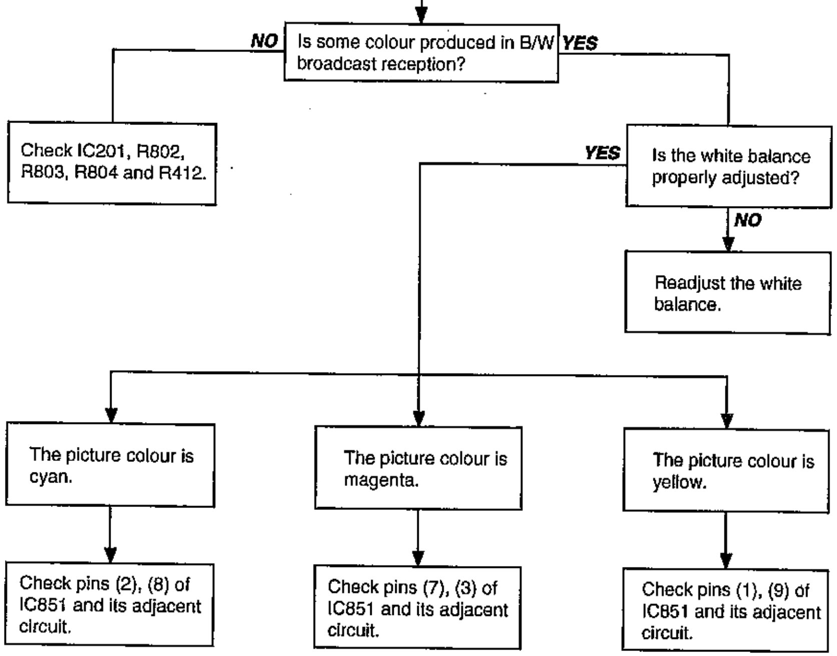




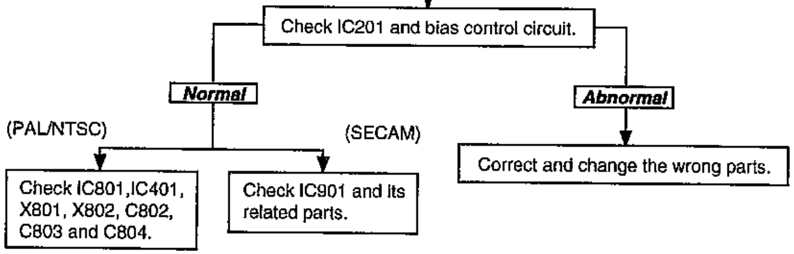


TROUBLESHOOTING TABLE (Continued)

NO SPECIFIC COLOUR

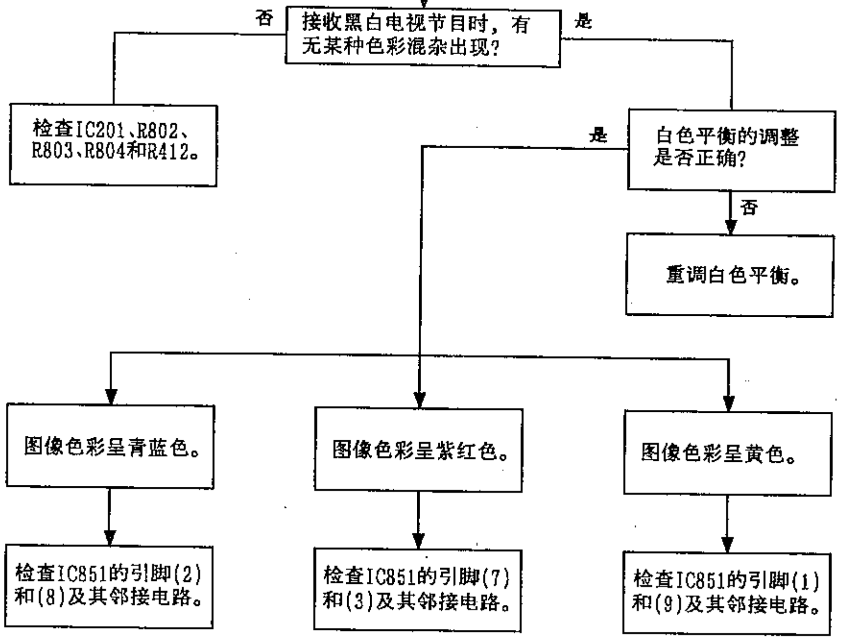

Is some colour produced in B/W broadcast reception?
NO
YES
Check IC201, R802, R803, R804 and R412.
Is the white balance properly adjusted?
YES
NO
Readjust the white balance.
The picture colour is cyan.
The picture colour is magenta.
The picture colour is yellow.
Check pins (2), (8) of IC851 and its adjacent circuit.
Check pins (7), (3) of IC851 and its adjacent circuit.
Check pins (1), (9) of IC851 and its adjacent circuit.

NO SPECIFIC COLOUR (NO COLOUR SYNCHRONIZATION)

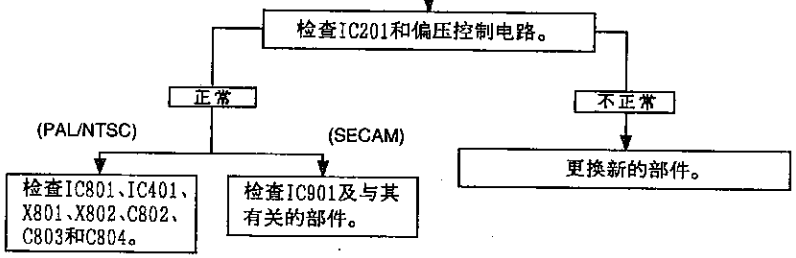

Check IC201 and bias control circuit.
Normal
Abnormal
(PAL/NTSC)
(SECAM)
Check IC801,IC401, X801, X802, C802, C803 and C804.
Check IC901 and its related parts.
Correct and change the wrong parts.

故障检修流程图（接上页）

色彩不符合规定要求

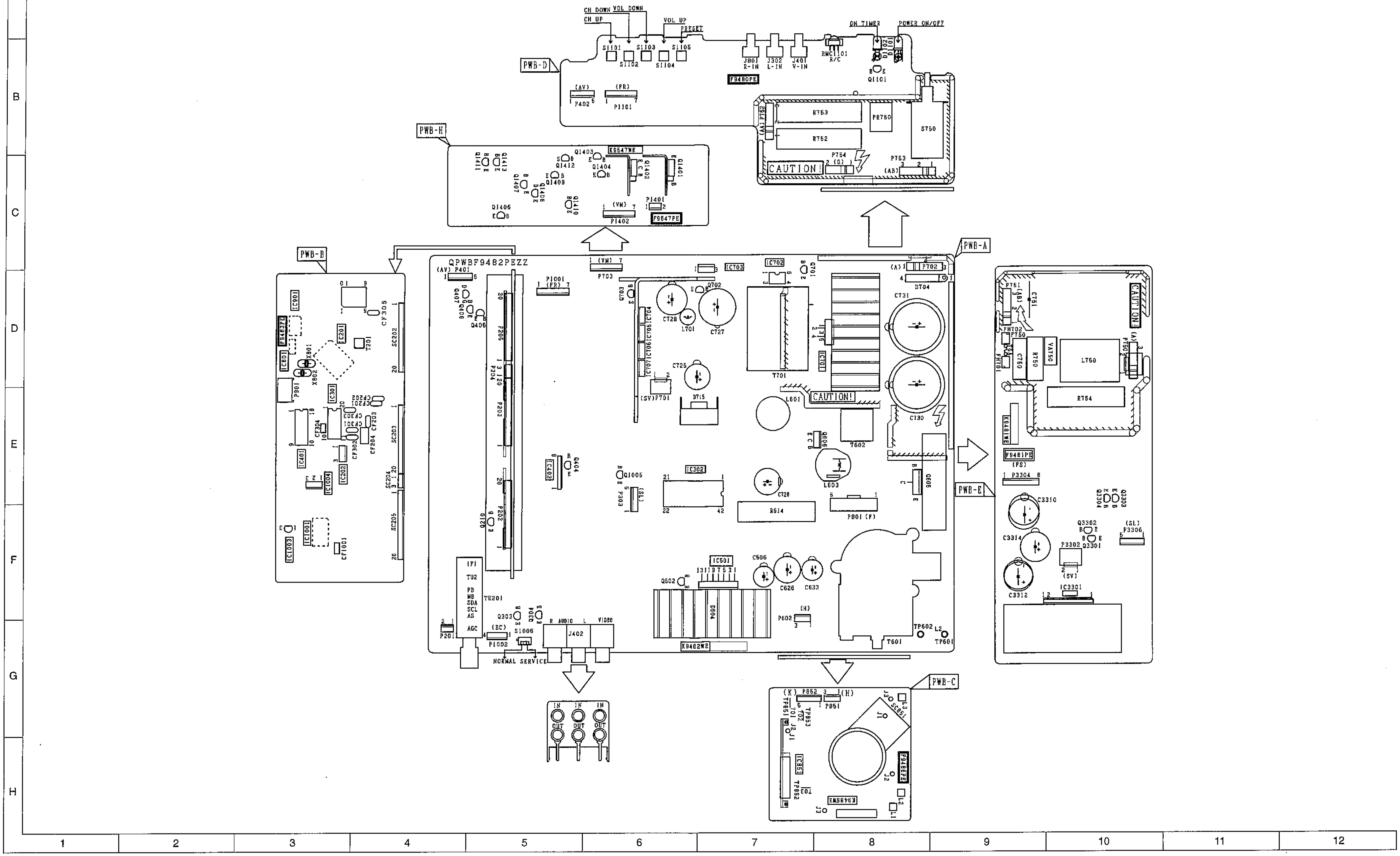

接收黑白电视节目时，有无某种色彩混杂出现？
否
是
检查IC201、R802、R803、R804和R412。
白色平衡的调整是否正确？
是
否
重调白色平衡。
图像色彩呈青蓝色。
图像色彩呈紫红色。
图像色彩呈黄色。
检查IC851的引脚(2)和(8)及其邻接电路。
检查IC851的引脚(7)和(3)及其邻接电路。
检查IC851的引脚(1)和(9)及其邻接电路。

色彩不符规定要求（无色彩同步）


检查IC201和偏压控制电路。
正常
不正常
(PAL/NTSC)
(SECAM)
检查IC801、IC401、X801、X802、C802、C803和C804。
检查IC901及与其有关的部件。
更换新的部件。

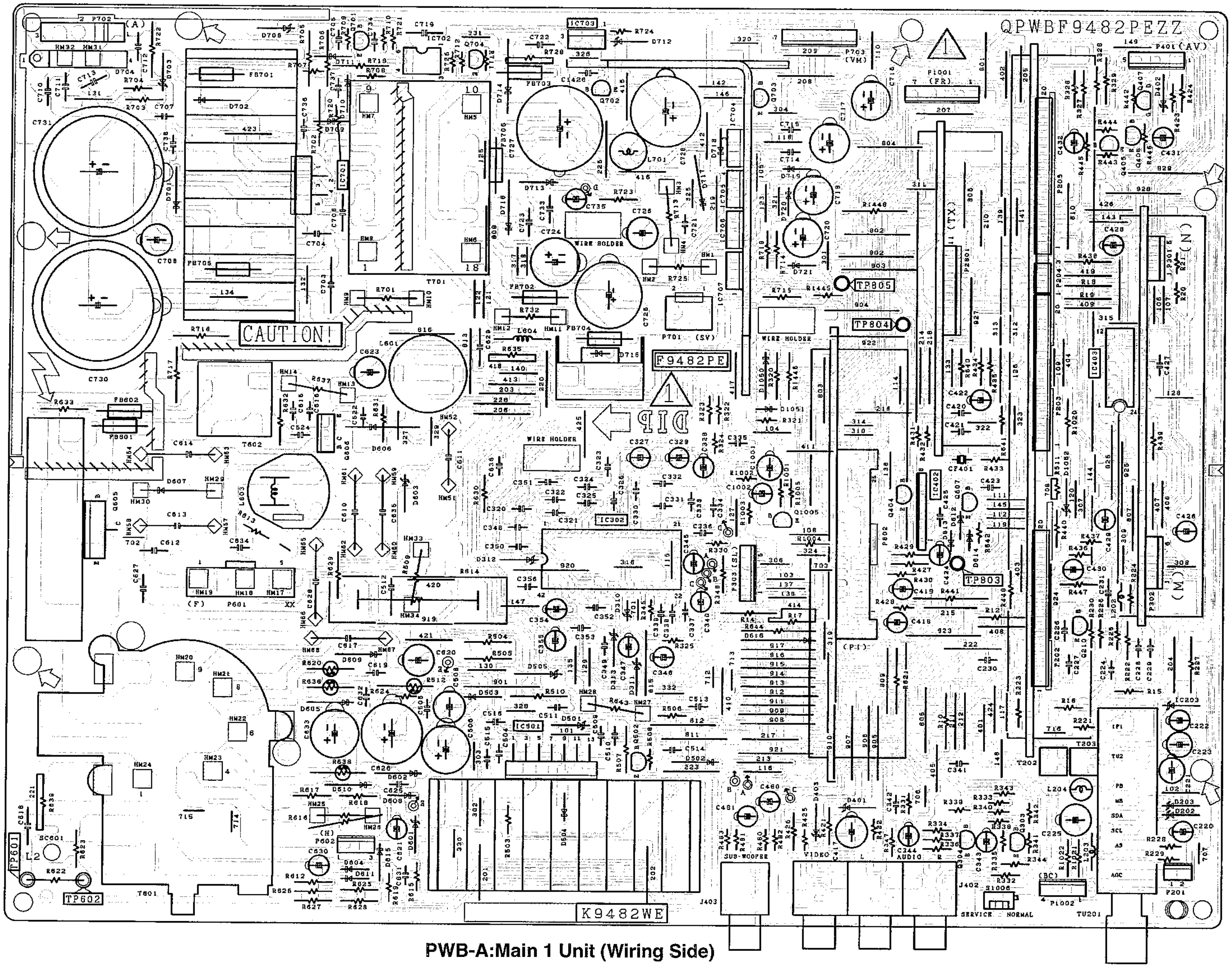
CHASSIS LAYOUT
机芯底盘电路布置

MODEL 29RN1/25RN1 CHASSIS LAYOUT



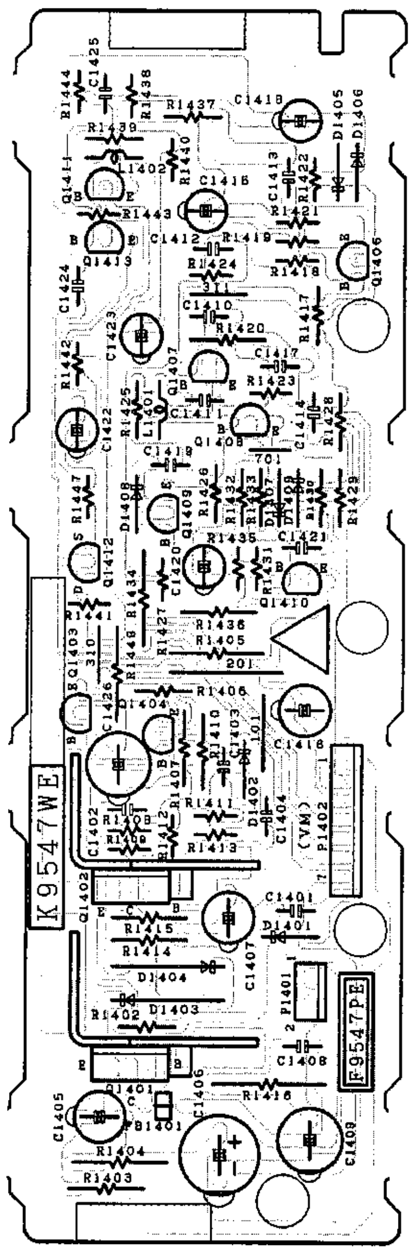
PRINTED WIRING BOARD ASSEMBLIES

印刷电路板的组装件



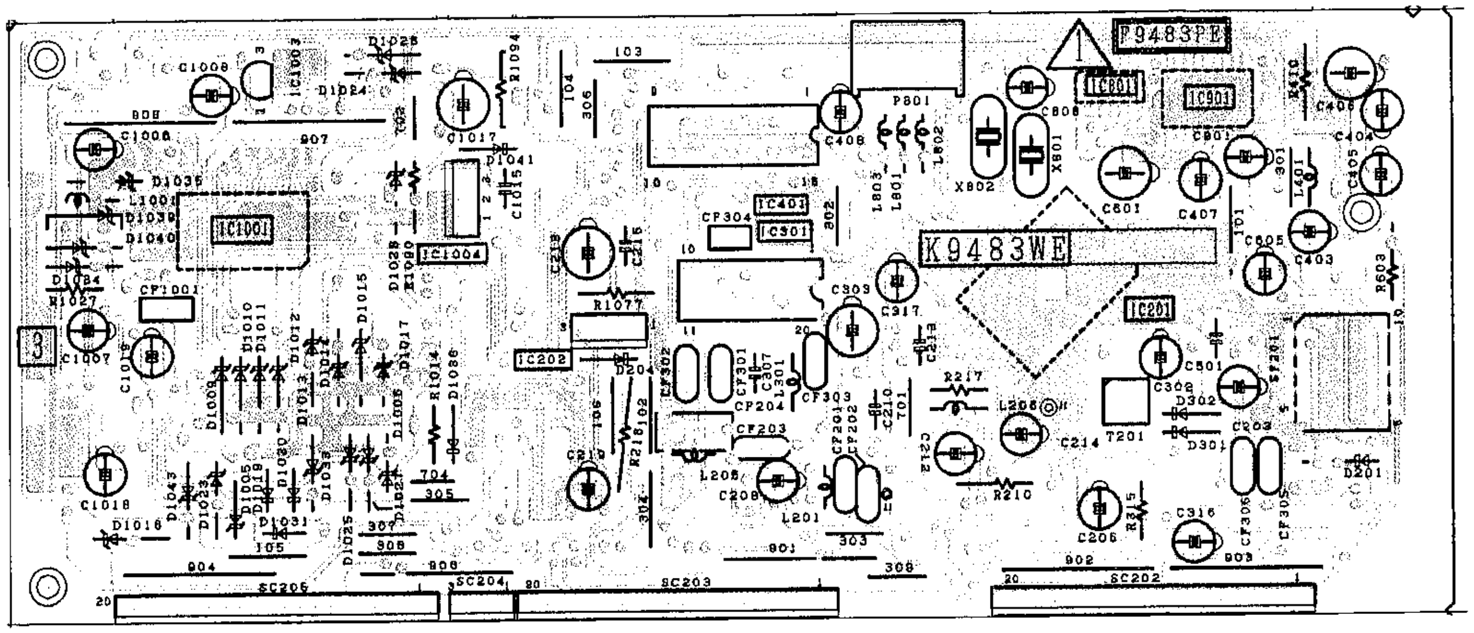
PWB-A:Main 1 Unit (Wiring Side)

印刷电路板-A：主电路装置（线路贴置侧）



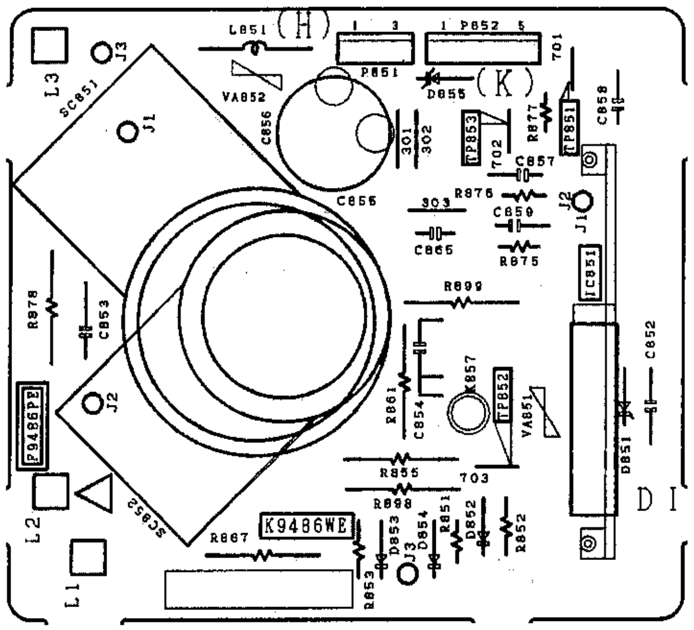
PWB-H:VM Unit (Wiring Side)

印刷电路板-H：VM电路装置（线路贴置侧）



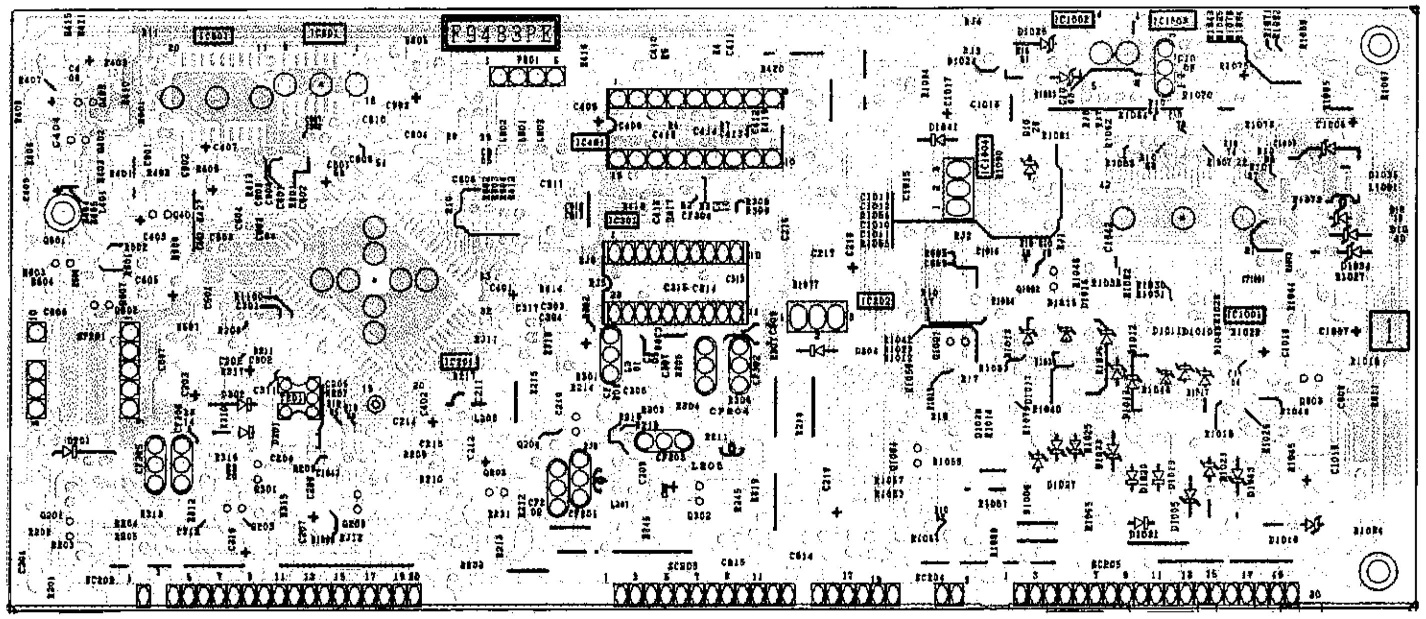
PWB-B:Main 2 Unit (Component Side)

印刷电路板-B：主电路装置 2（部件装备侧）



PWB-C:CRT Unit (Wiring Side)

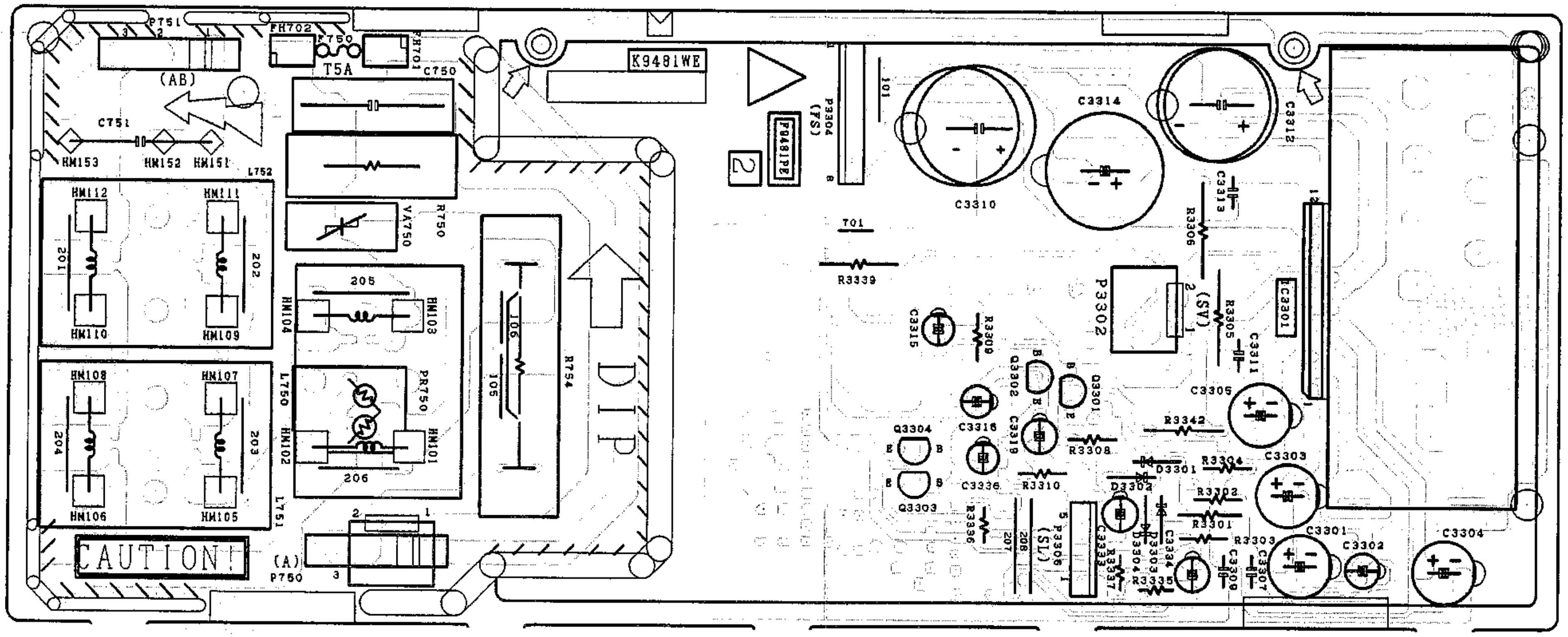
印刷电路板-C：CRT电路装置(线路贴置侧)



PWB-B:Main 2 Unit (Component Side)

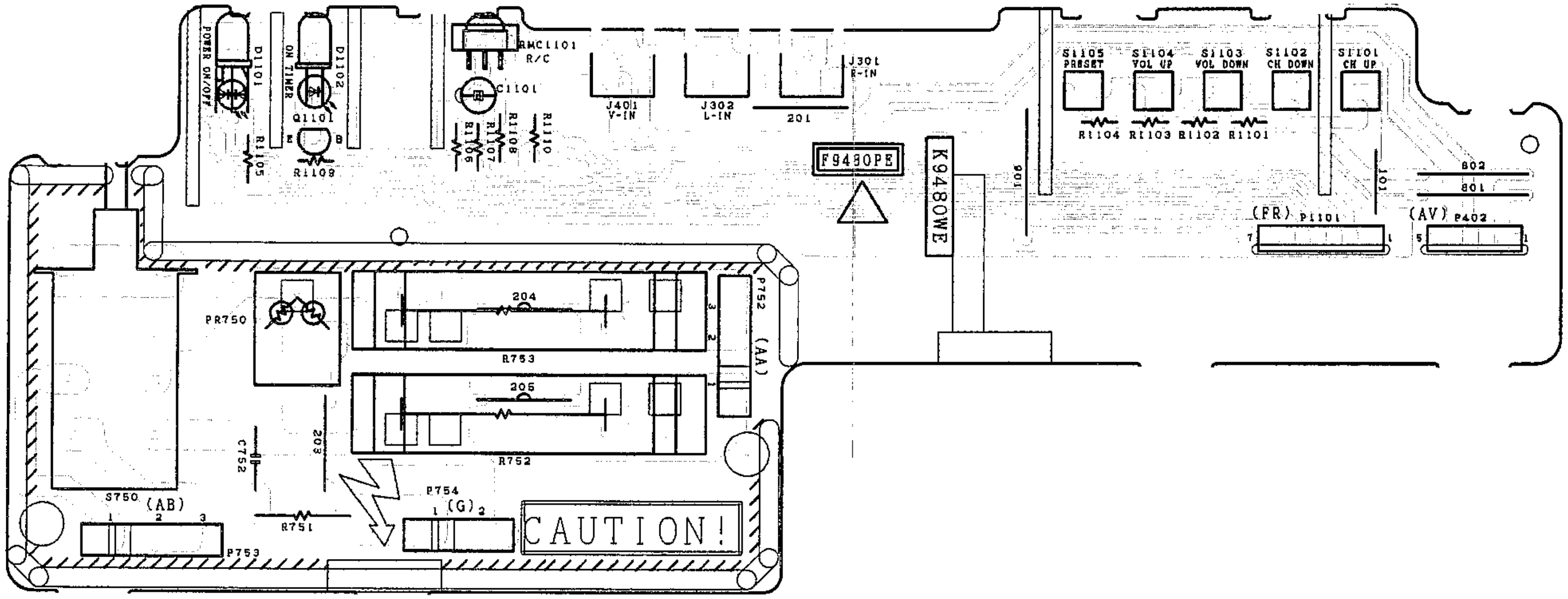
印刷电路板-B：主电路装置 2（箔片贴置侧）

A
B
C
D
E
F
G
H



PWB-E:S-OUT Unit (Wiring Side)

印刷电路板-E：扬声器输出电路装置(线路贴置侧)



PWB-D:Front Unit (Wiring Side)

印刷电路板-D：前面电路装置(线路贴置侧)

1 2 3 4 5 6 7 8 9 10 11 12

DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTES:

1. *DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.*
2. *SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.*

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH "⚠ " (▨) ARE IMPOTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (—·—) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.

WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTES:

1. *The unit of resistance "ohm" is omitted. (K = 1000 ohms, M = Mega ohm).*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *All capacitors are μF, unless otherwise noted. (P = μμF).*

VOLTAGE MEASUREMENT CONDITIONS:

1. *Voltages in parenthesis measured with no signal.*
2. *Voltages without parenthesis measured with 3mV B & W or Colour signal.*
3. *All the voltages in each point are measured with VTVM.*

WAVEFORM MEASUREMENT CONDITIONS:

1. *The colour bar generator signal of 1.0V peak applied at pin (24) of IC201.*
2. *Approximately 4V AGC bias .*

电路原理图的说明

注意：这里的电路原理图均为最初设计原图，与您的机器的电路原理可能有不同之处。

安全注意事项：

1. 更换电路元件时，必须先拔出电源插头，切断电源。
2. 机芯底盘电路处工作状态时，应注意电路中半导体元件散热片高电位可能导致的电击危险。

安全使用注意要点：

标有“⚠”（▨）的元件为对保证本机长久的安全使用起重要的元件。更换这些元件时，必须使用规定的纯正正牌元件，以保证本机的使用安全以及使用寿命。

维修注意事项：

电路中由点划线（—·—）所围部分为与交流电源直接相接线路。对这些部分的线路进行维修时，应于本机与交流电源之间用隔离变压器相接，以防止不意的电击之危险。

电路单位说明：

1. 电阻欧姆(Ω)单位予以略记（K=千欧姆，M=兆欧姆）。
2. 除特别说明者外，图中电阻功率均为1/8瓦特。
3. 除特别说明者（P=微微法拉）外，图中电容单位均为μF(微法拉)。
4. 除特别说明者外，图中二极管均为1SS119。

电压测定条件：

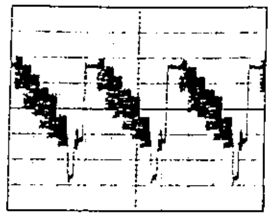
1. 括号外的电压值为PAL制式彩色信号状态下所测。
2. 括号中的电压值为无信号状态下所测。
3. 所有的电压值均由高阻抗电压计所测。

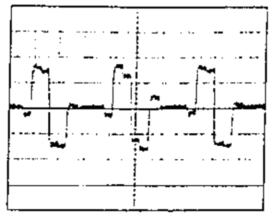
波形测定条件：

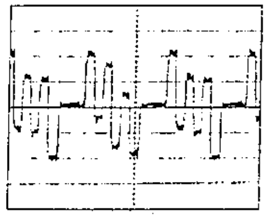
1. 1.0Vp-p的彩色信号施加于IC201的引脚(24)。
2. 调谐器AGC(自动增益控制)电压约为4V。

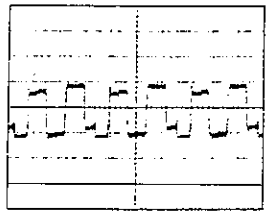
WAVEFORMS

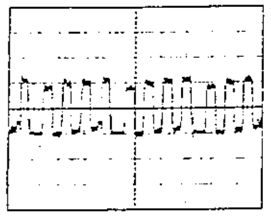
波形图

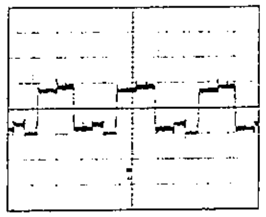

①1.02 Vp-p (H)


②0.64 Vp-p (H)


③0.9 Vp-p (H)


④2.8 Vp-p (H)


⑤2.4 Vp-p (H)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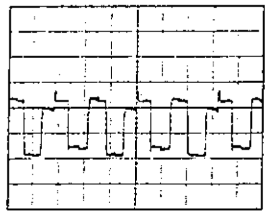
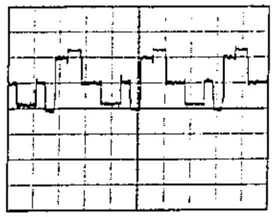

⑦120 Vp-p (H)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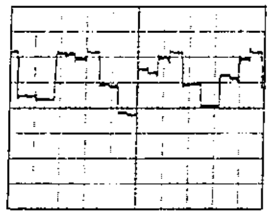
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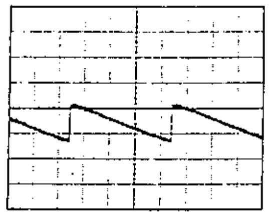
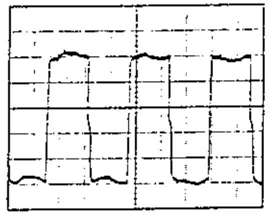
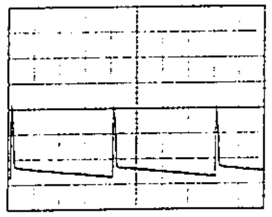
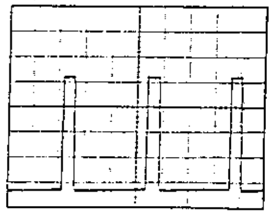
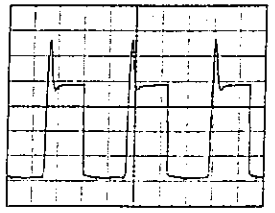
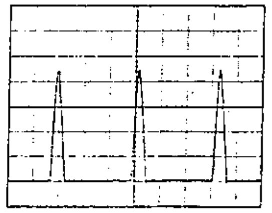

⑩1.3 Vp-p (V)

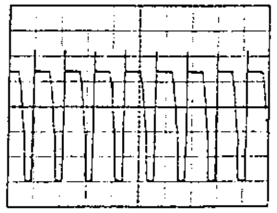

⑪5.2 Vp-p (H)


⑫56 Vp-p (V)


⑬9.2 Vp-p (H)

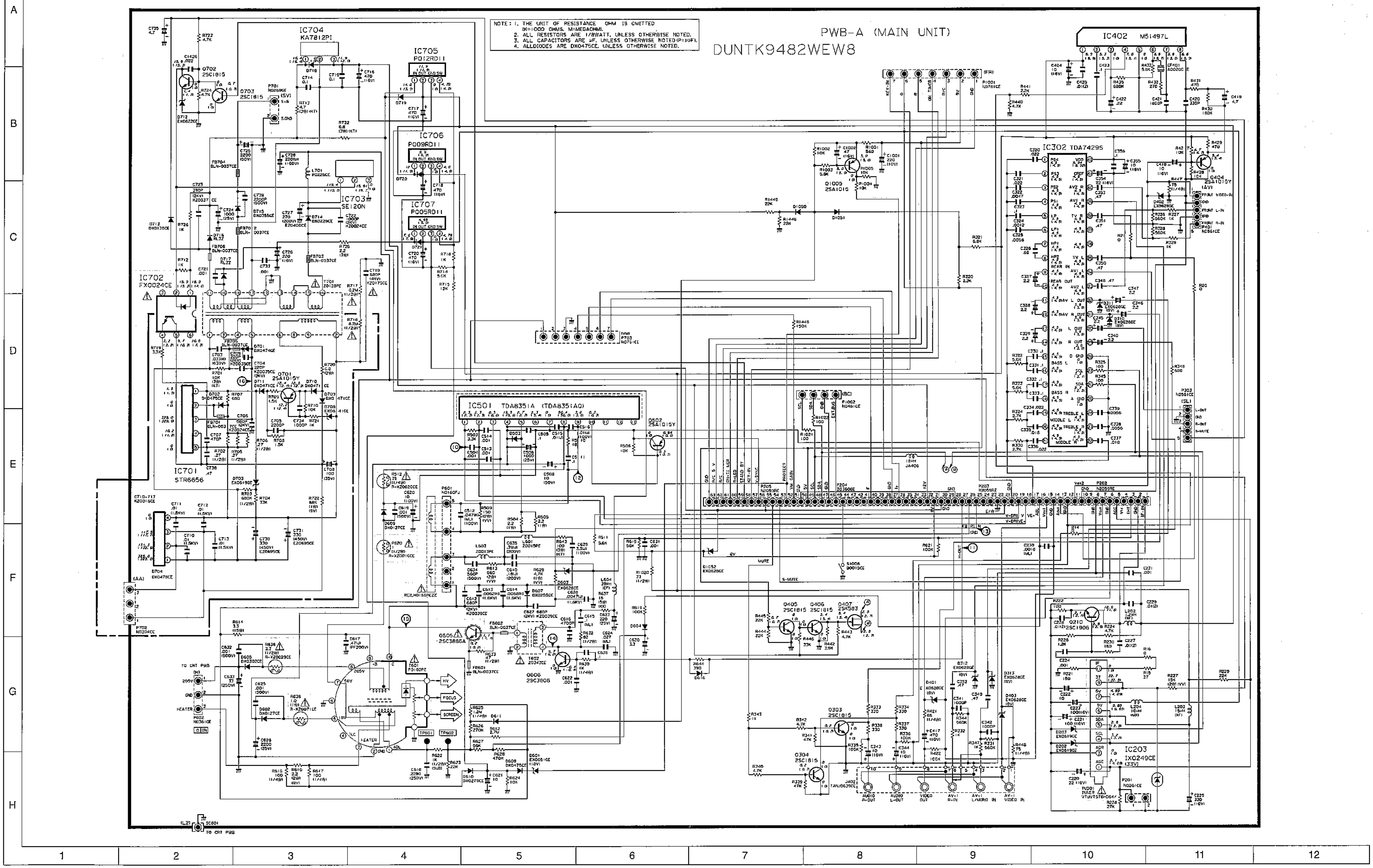

⑭28 Vp-p (H)


⑮1150 Vp-p (H)


⑯500 Vp-p

MODEL 25RN1 SCHEMTIC DIAGRAM ■ Main 1 Unit

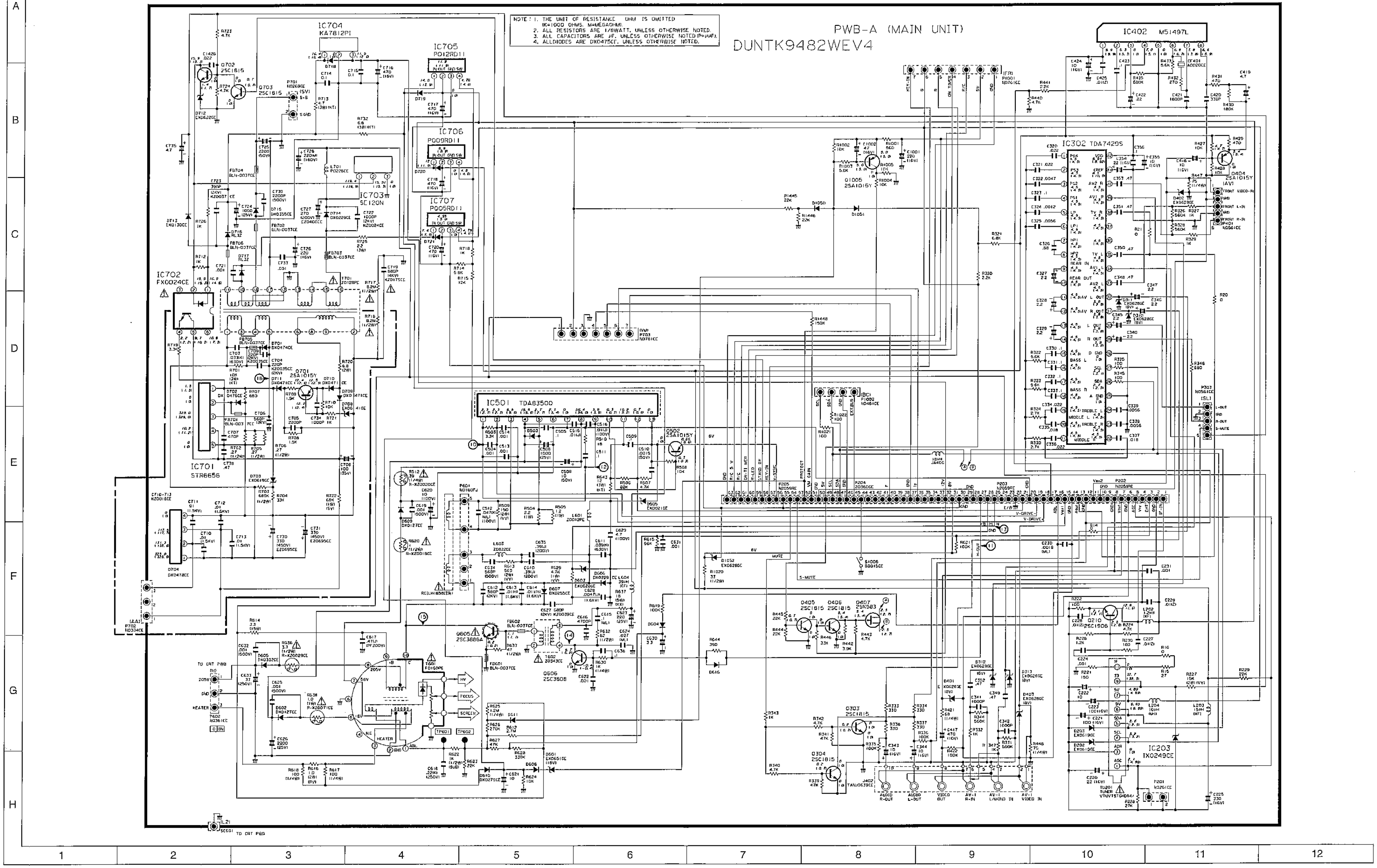
型号25RN1电路原理图 ■主电路装置 1



NOTE : 1. THE UNIT OF RESISTANCE OHM IS OMITTED (K=1000 OHMS. M=MEGAOHM).
2. ALL RESISTORS ARE 1/8WATT. UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS ARE μF. UNLESS OTHERWISE NOTED(P=μμF).
4. ALLDIODES ARE DX0475CE. UNLESS OTHERWISE NOTED.

MODEL 29RN1 SCHEMTIC DIAGRAM ■ Main 1 Unit

型号29RN1电路原理图 ■主电路装置 1

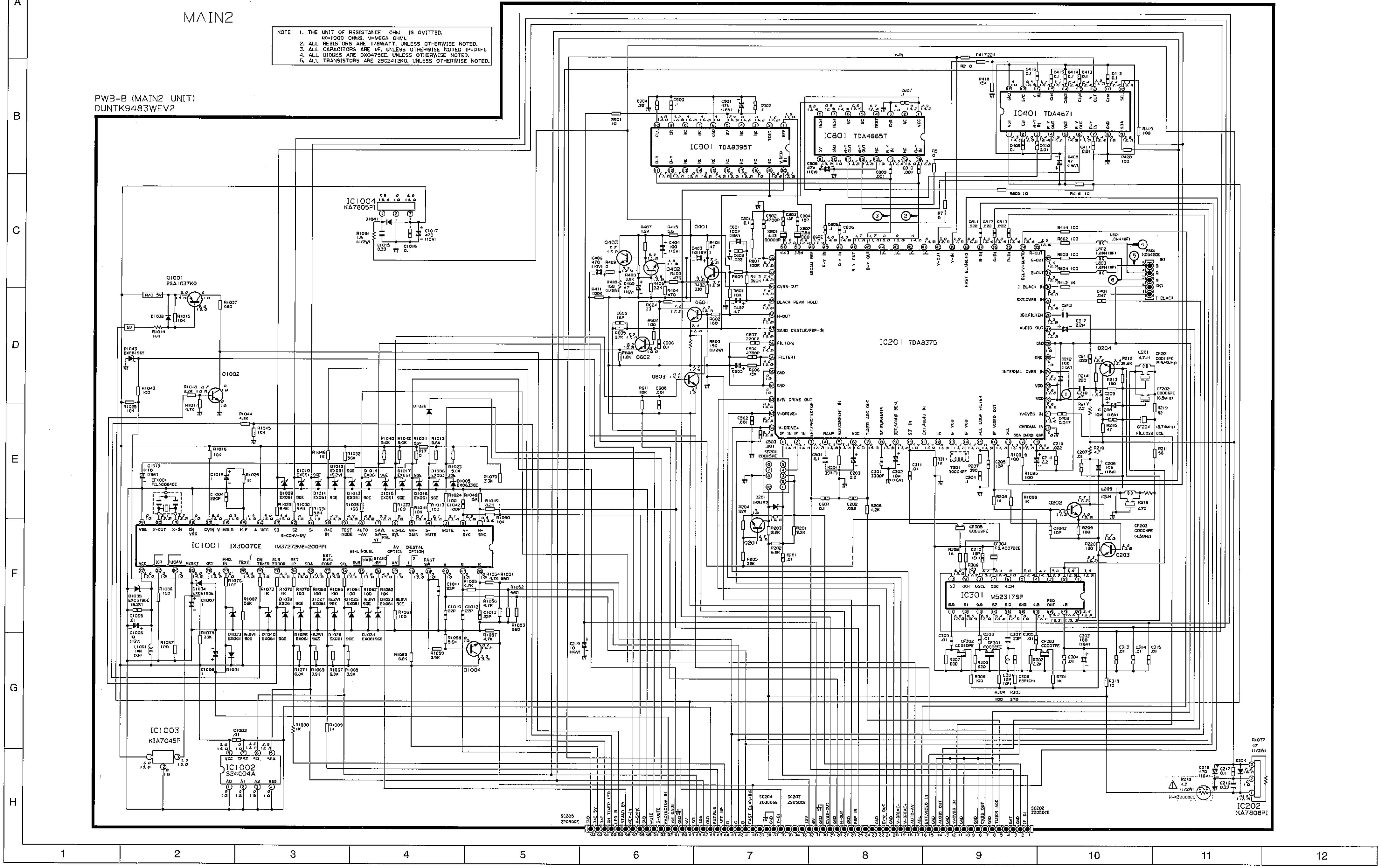


NOTE : 1. THE UNIT OF RESISTANCE OHM IS OMITTED (K=1000 OHMS. M=MEGAOHM).
2. ALL RESISTORS ARE 1/8WATT. UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS ARE µF. UNLESS OTHERWISE NOTED (P=µµF).
4. ALLDIODES ARE DX0475CE. UNLESS OTHERWISE NOTED.

SCHEMTIC DIAGRAM ■ Main 2 Unit

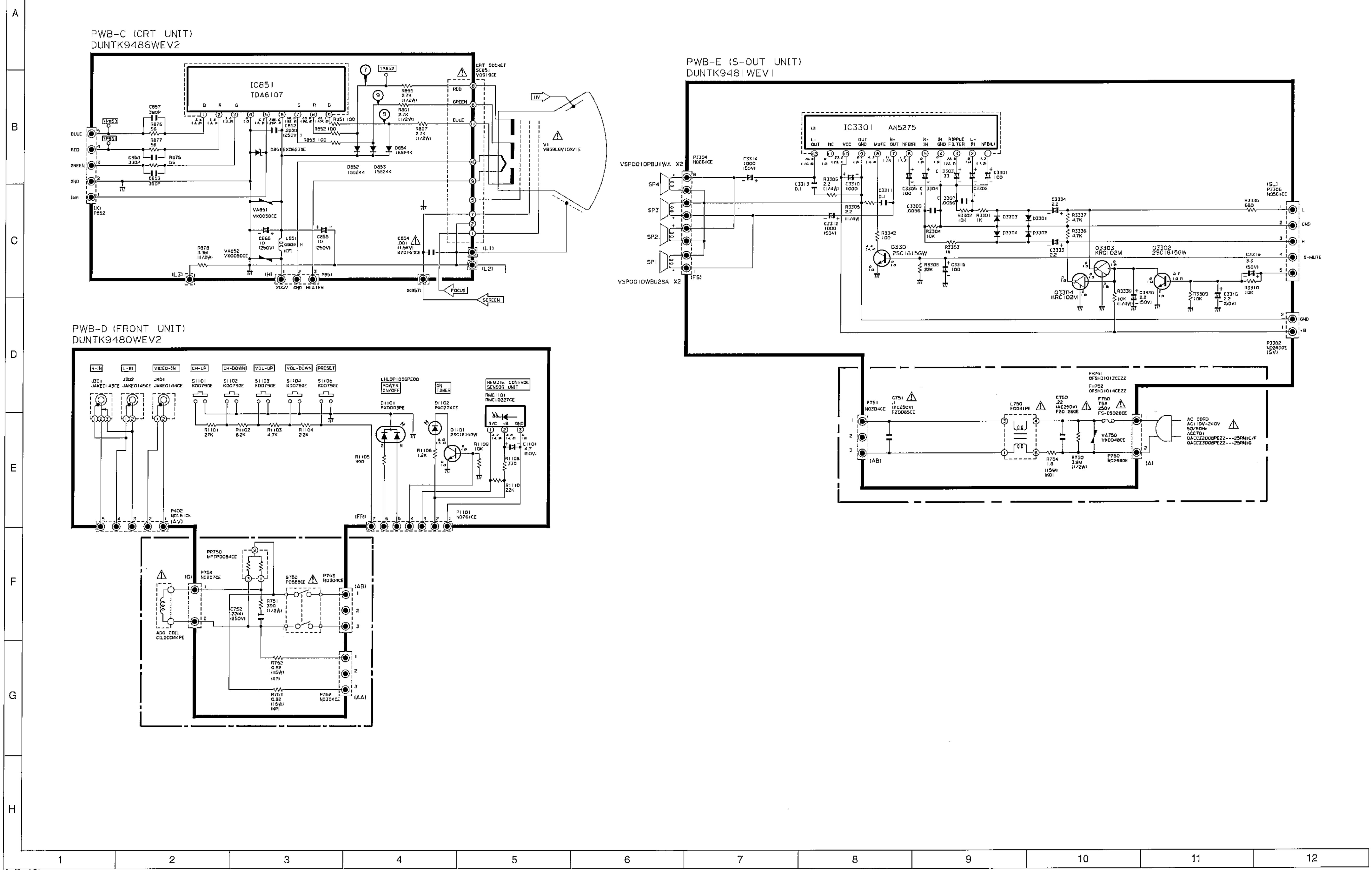
电路原理图 ■主电路装置 2

NOTE
1. THE UNIT OF RESISTANCE OHM IS OMITTED. (K=1000 OHMS, M=MEGA OHM).
2. ALL RESISTORS ARE 1/8WATT, UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS ARE µF, UNLESS OTHERWISE NOTED (P=µµF).
4. ALL DIODES ARE DX0475CE, UNLESS OTHERWISE NOTED.
5. ALL TRANSISTORS ARE 2SC2412K0, UNLESS OTHERWISE NOTED.



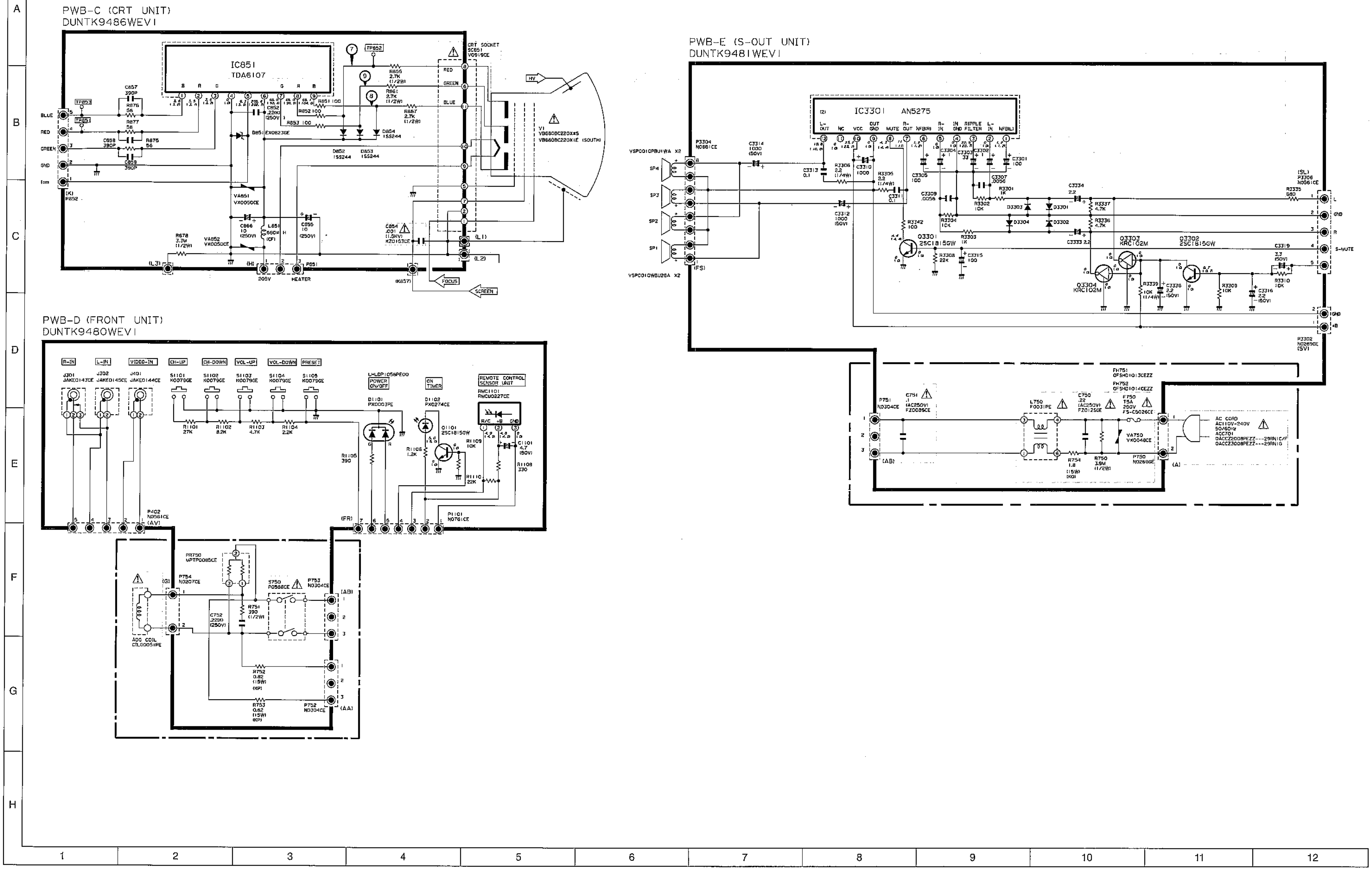
MODEL 25RN1 SCHEMTIC DIAGRAM ■ CRT / Front / S-OUT Unit

型号25RN1电路原理图 ■CRT/前面/扬声器输出电路装置



MODEL 29RN1 SCHEMTIC DIAGRAM ■ CRT / Front / S-OUT Unit

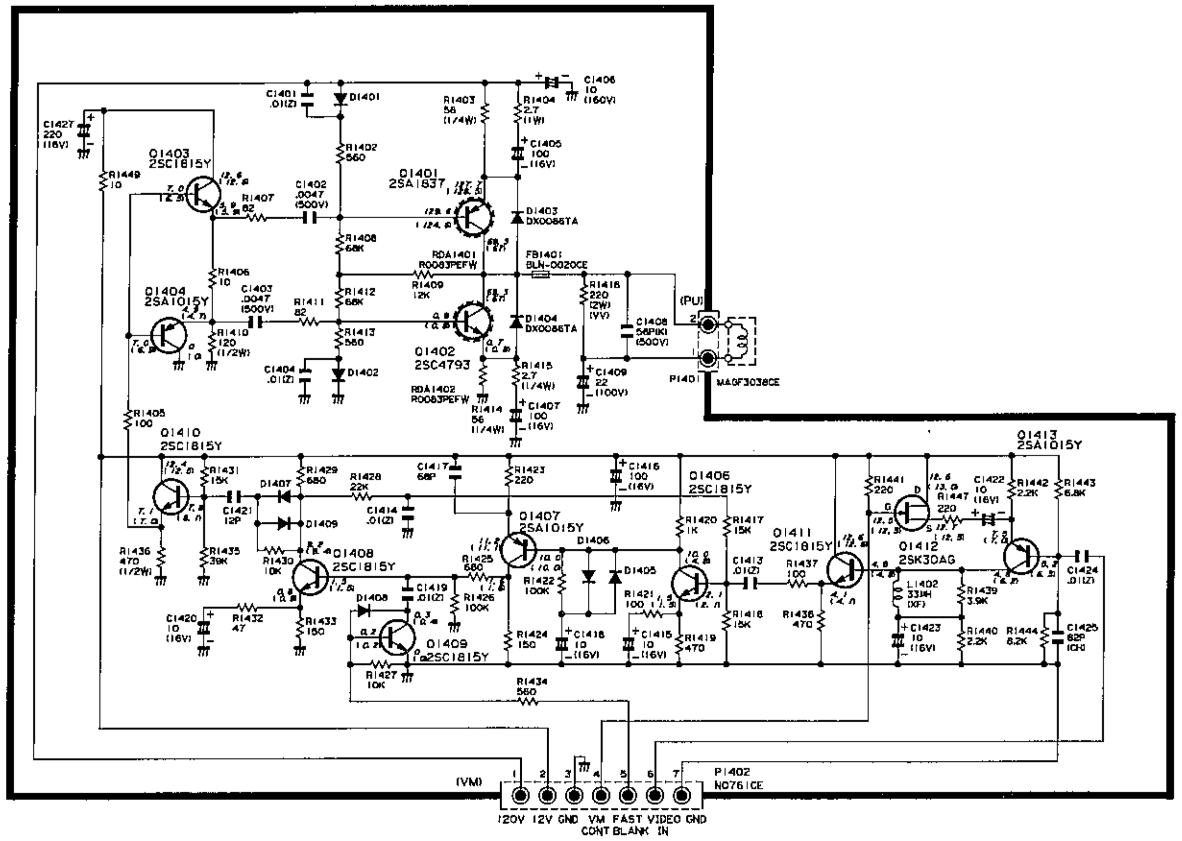
型号29RN1电路原理图 ■CRT/前面/扬声器输出电路装置



MODEL 25RN1 SCHEMTIC DIAGRAM ■ VM Unit

型号25RN1电路原理图 ■VM电路装置

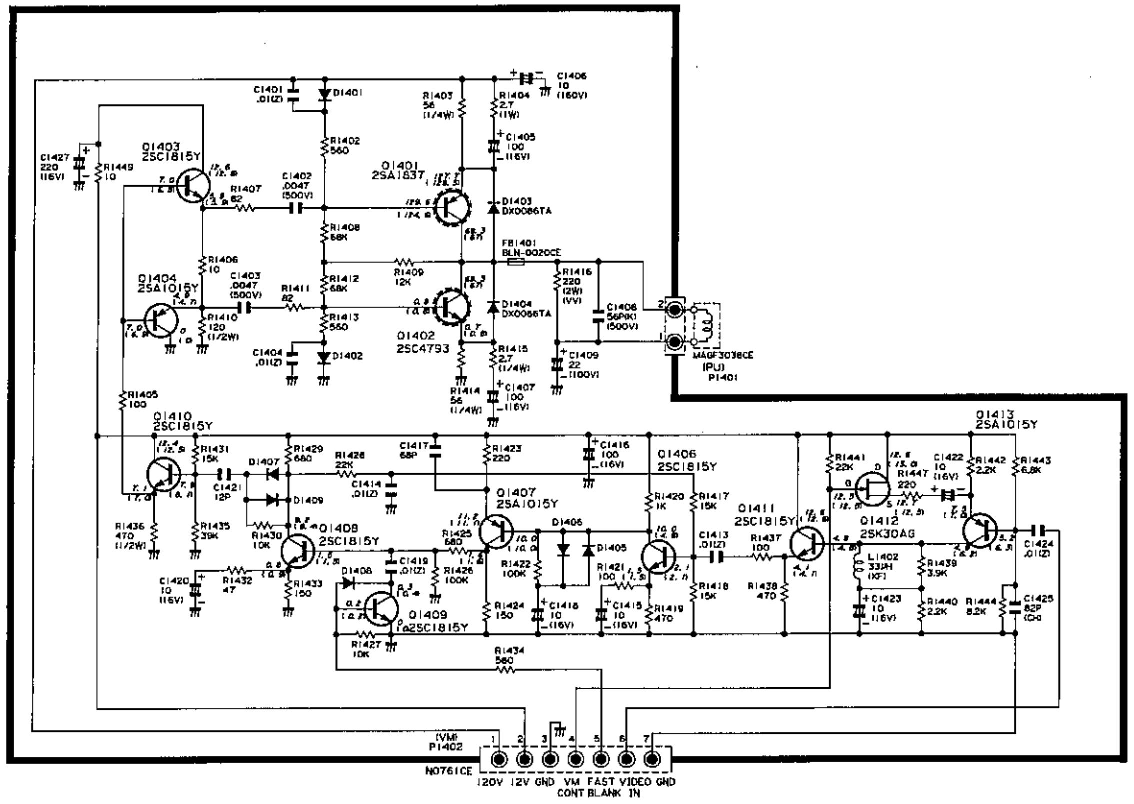
PWB-H (VM UNIT)
DUNTK9547WEV3



MODEL 29RN1 SCHEMTIC DIAGRAM ■ VM Unit

型号29RN1电路原理图 ■VM电路装置

PWB-H (VM UNIT)
DUNTK9547WEV0



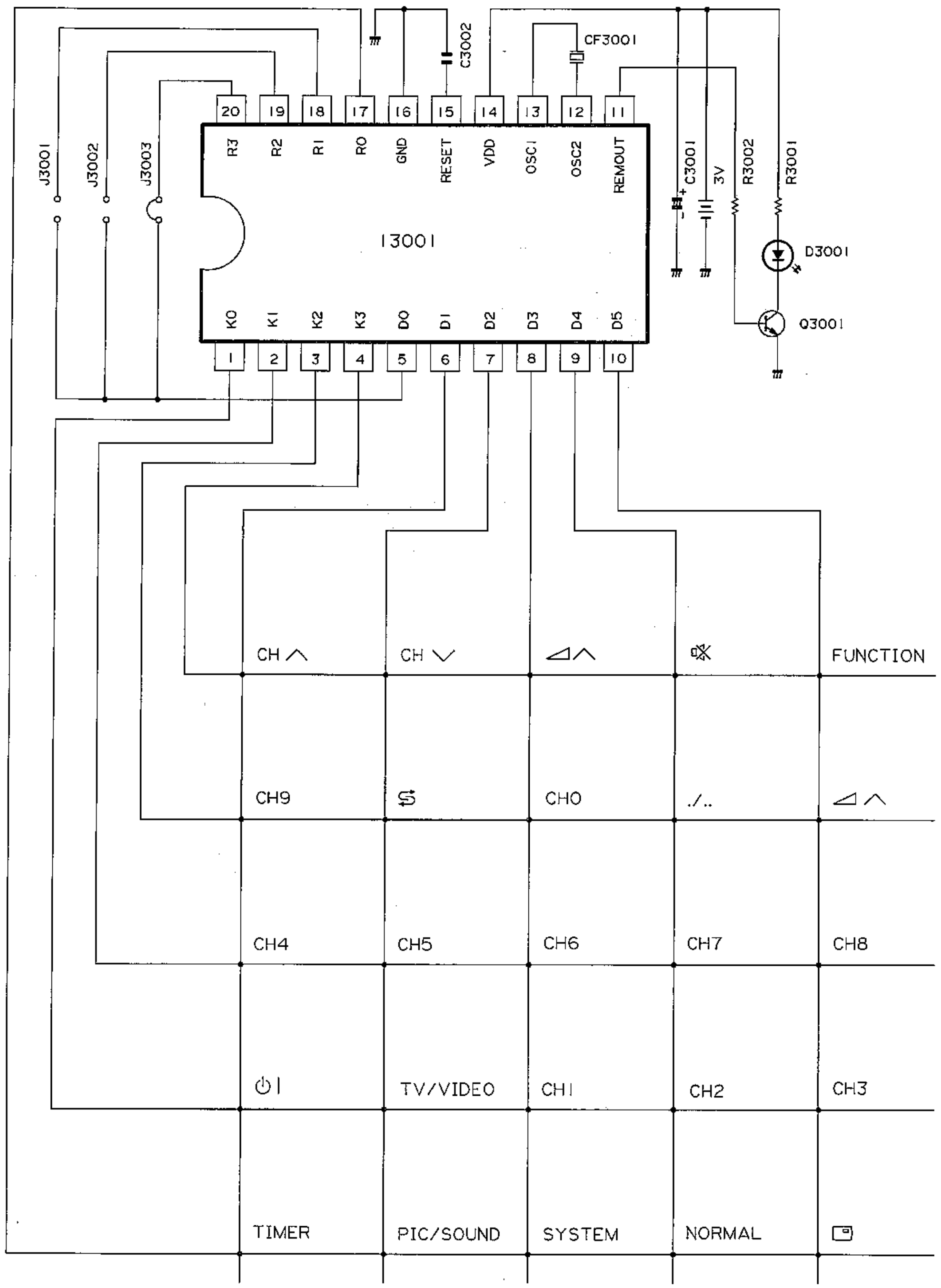
■ Infrared Rmote Control Unit

红外线遥控器

NOTE: The parts here shown are supplied as an assembly but not independently.

注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货。

RRMCG1384PESA

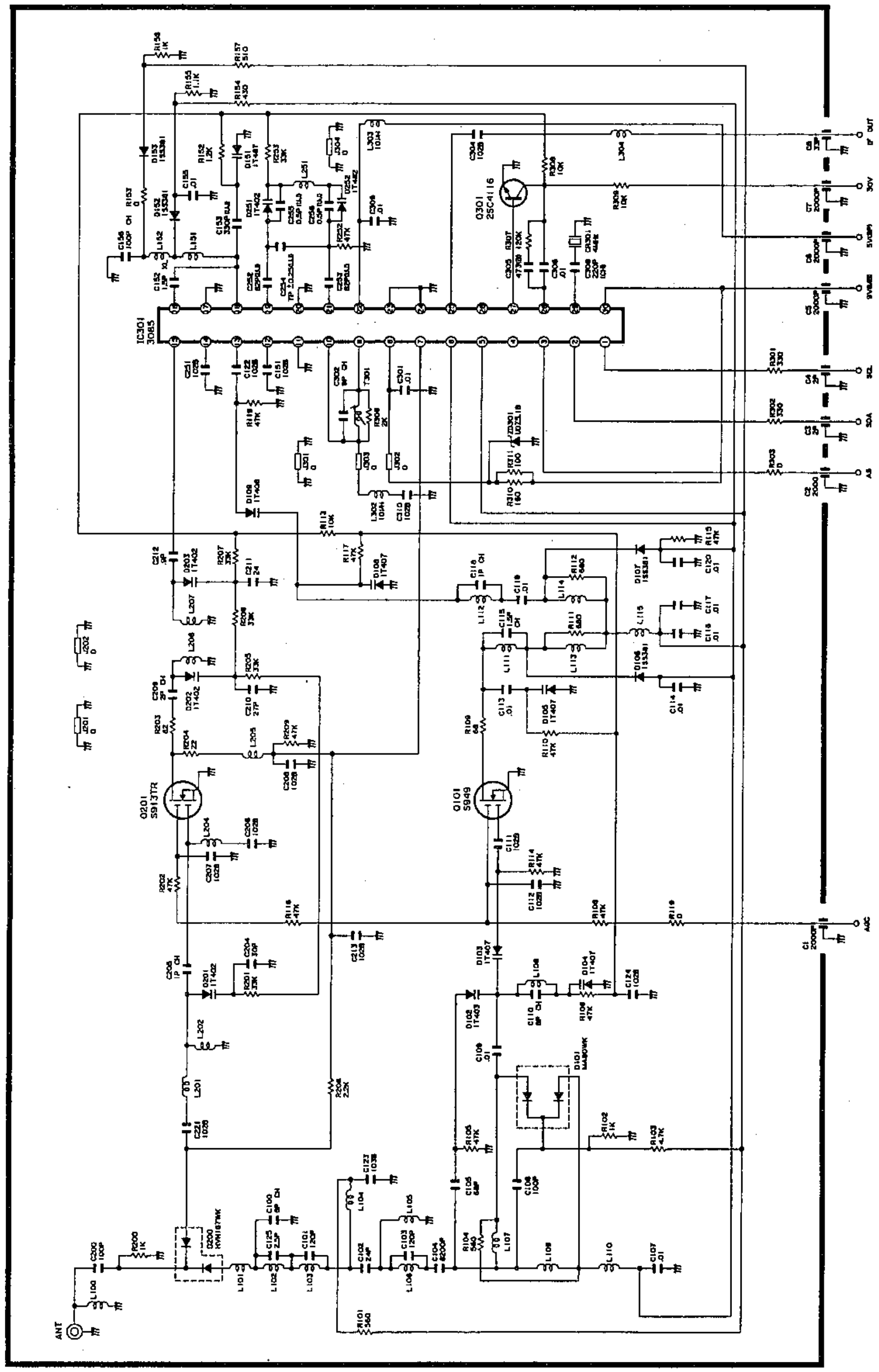


■ Tuner 调谐器

VTUVTST6HD64/

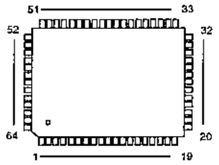
NOTE: The parts here shown are supplied as an assembly but not independently.

注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货



SOLID STATE DEVICE BASE DIAGRAM
固体器件基座图

TOP VIEW 俯视图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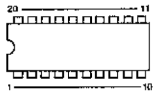
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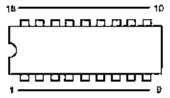
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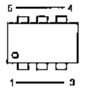
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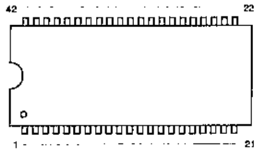
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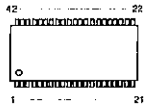
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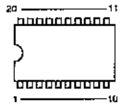
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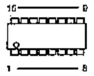
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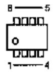
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BOTTOM VIEW 侧视图

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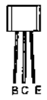
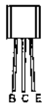
2SC2412



RC102M



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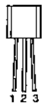

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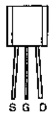

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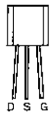

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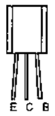

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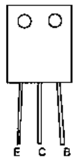

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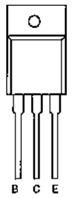

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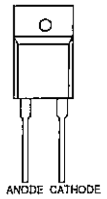
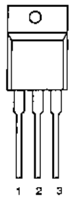
2SC4793



DX0355CE



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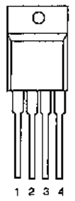

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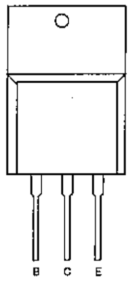

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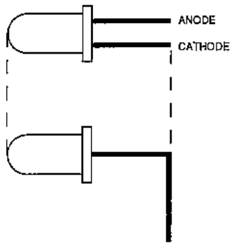

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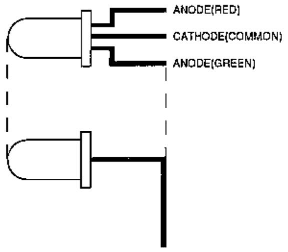

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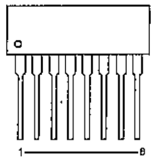

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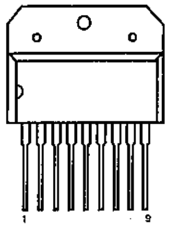

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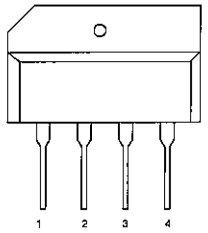
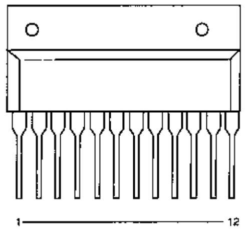


STR6656



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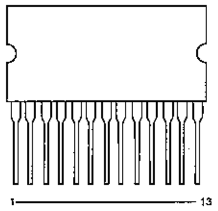
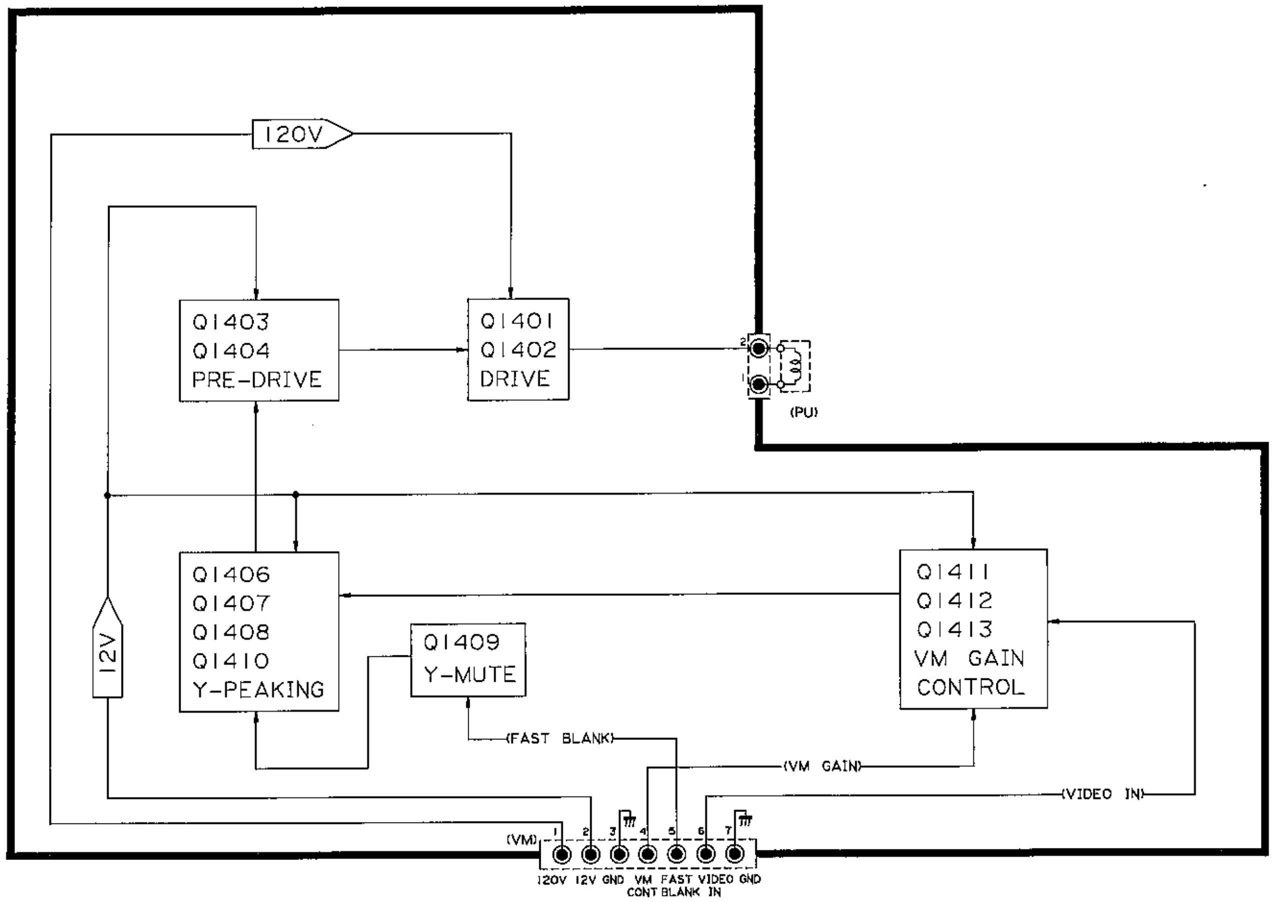


TDA8350
TDA8351

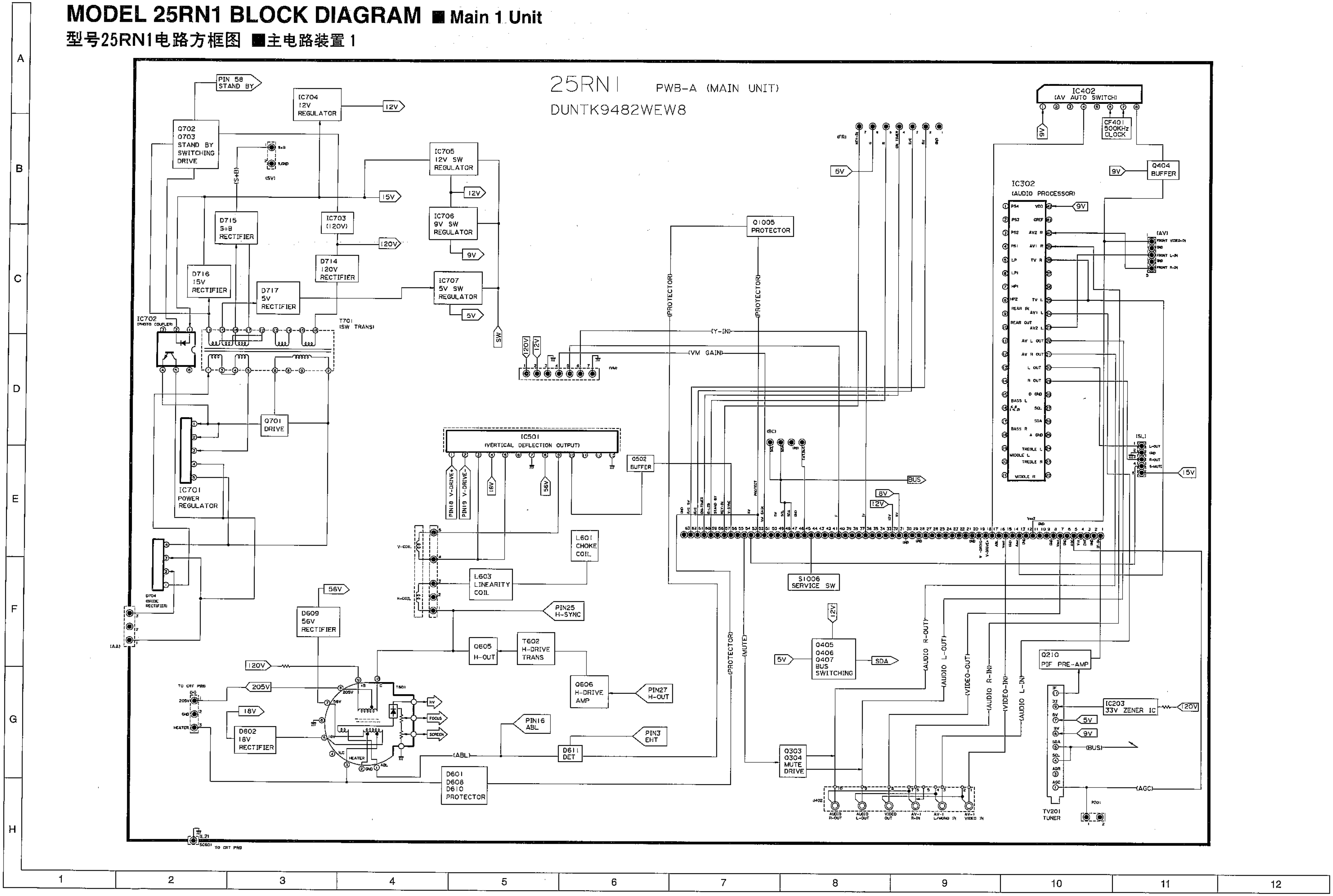
BLOCK DIAGRAM ■ VM Unit
电路方框图 ■VM电路装置

25RN1/29RN1
PWB-H (VM UNIT)
DUNTK9547WEV0/V3

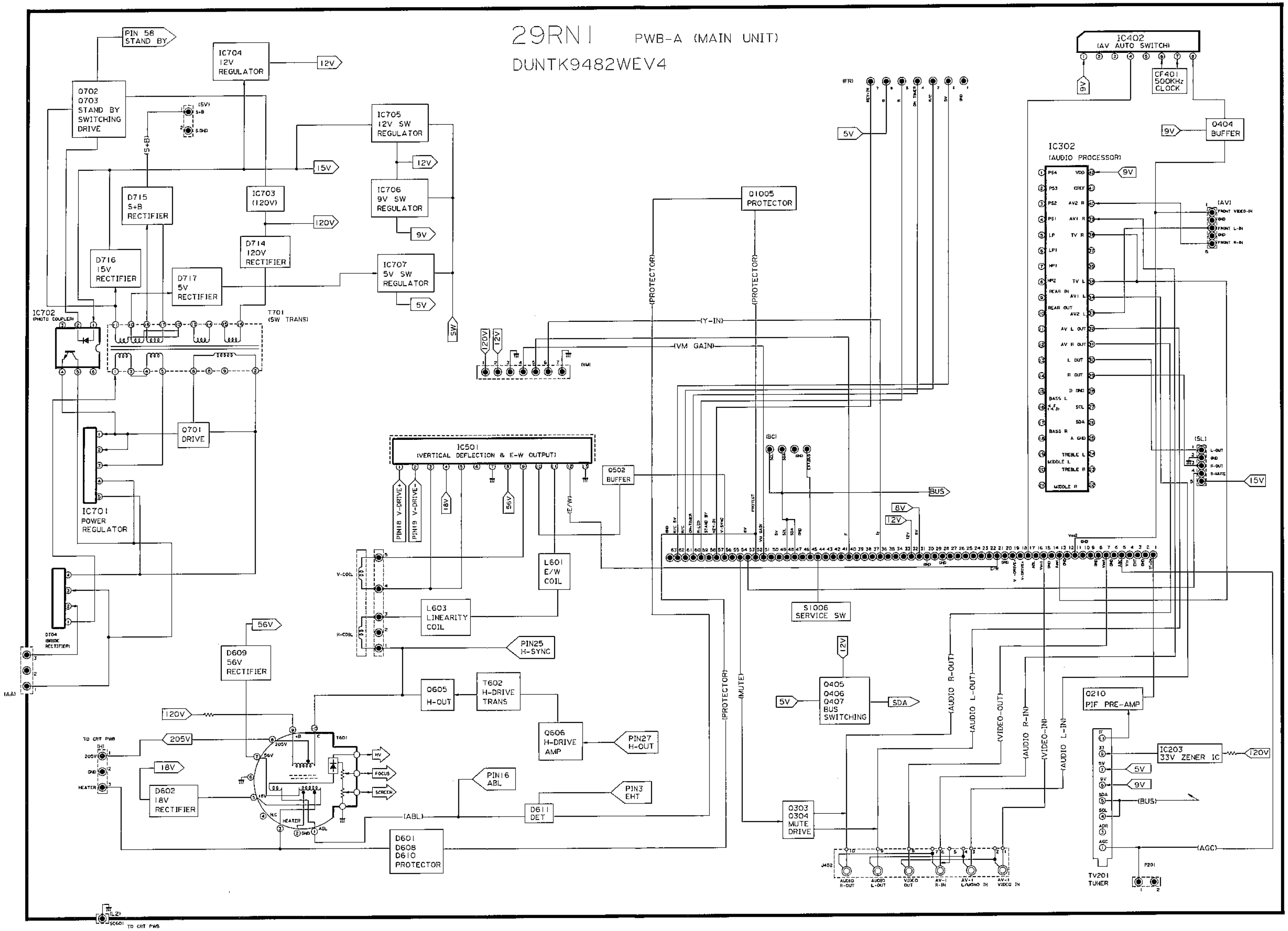


MODEL 25RN1 BLOCK DIAGRAM ■ Main 1 Unit

型号25RN1电路方框图 ■主电路装置 1



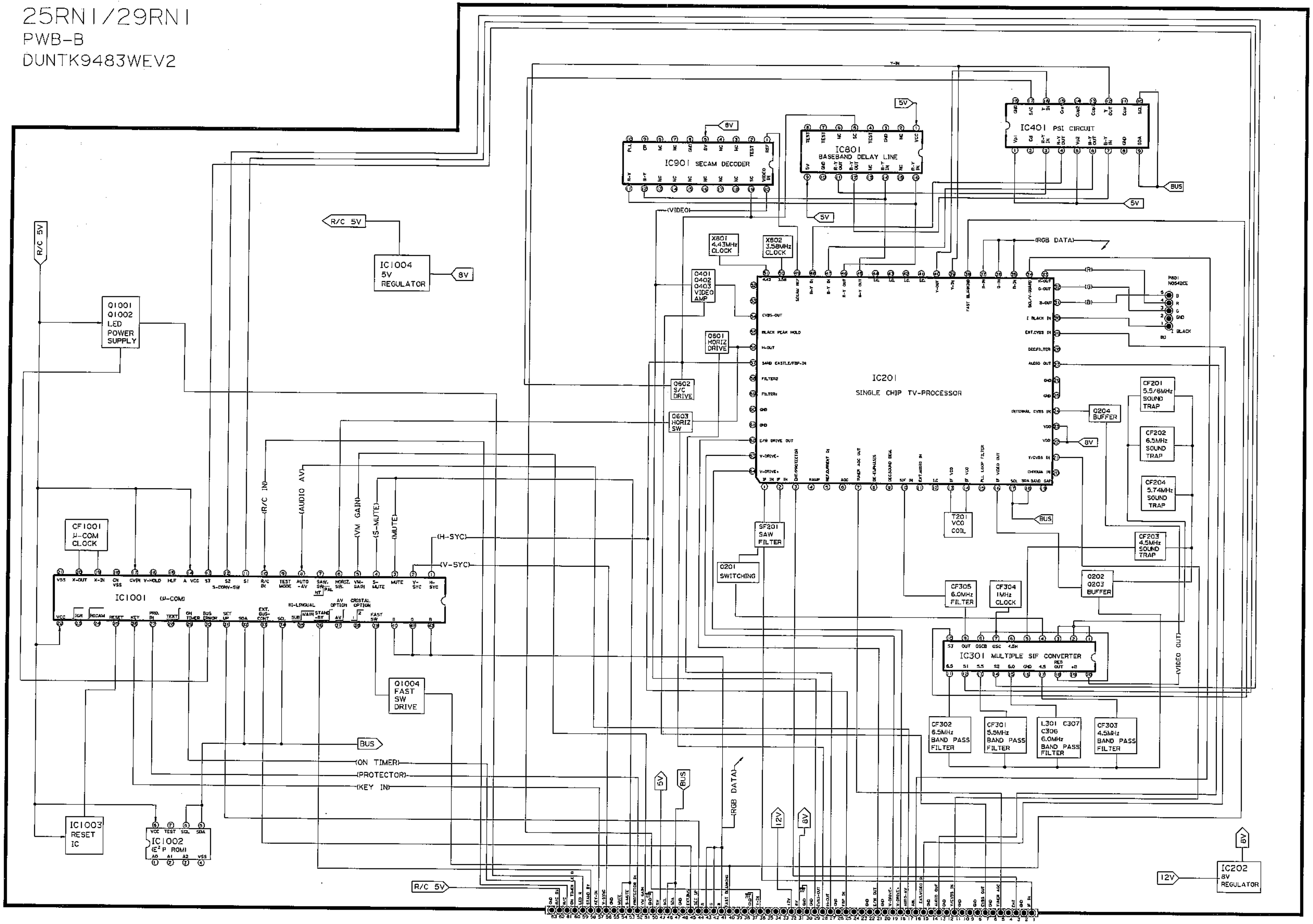
MODEL 29RN1 BLOCK DIAGRAM ■ Main 1 Unit
型号29RN1电路方框图 ■主电路装置 1



BLOCK DIAGRAM ■ Main 2 Unit

电路方框图 ■主电路装置 2

25RN1/29RN1
PWB-B
DUNTK9483WEV2

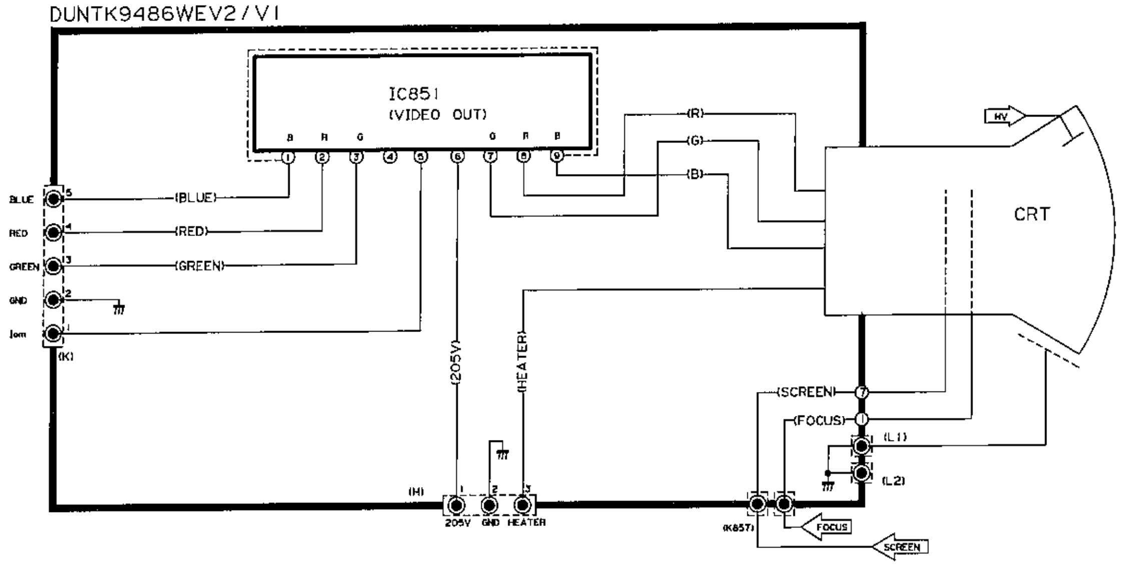


BLOCK DIAGRAM ■ CRT / Front / S-OUT Unit

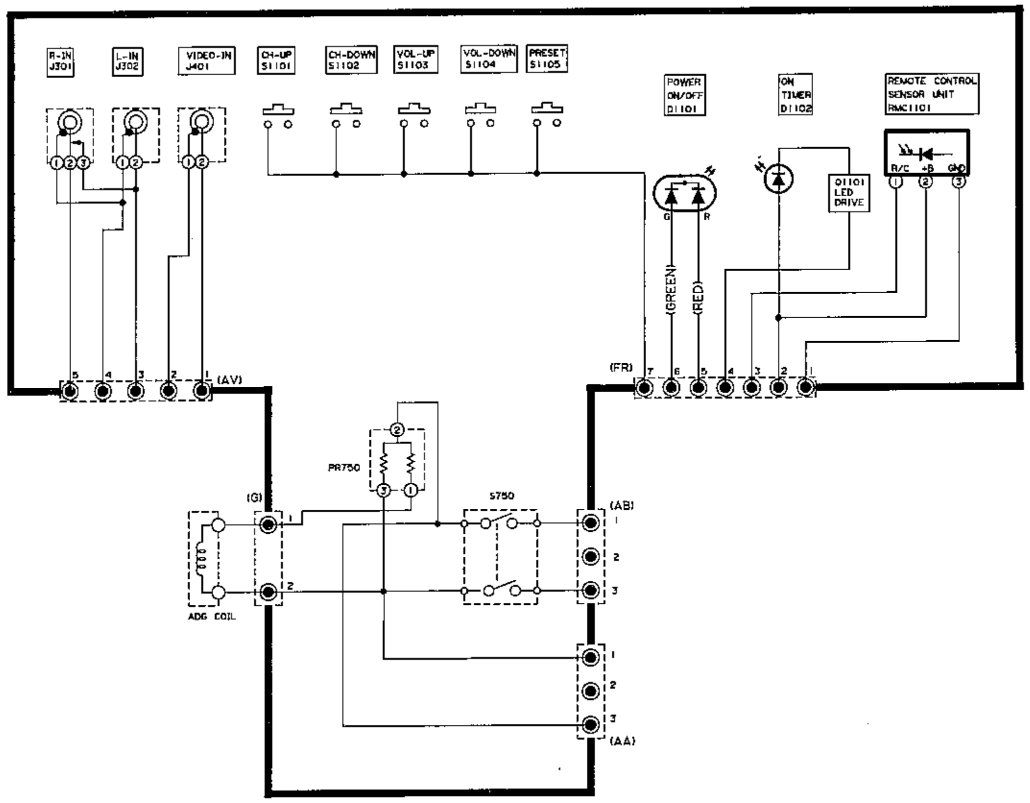
电路方框图 ■CRT/前面/扬声器输出电路装置

⊕25RN1/29RN1 SUB

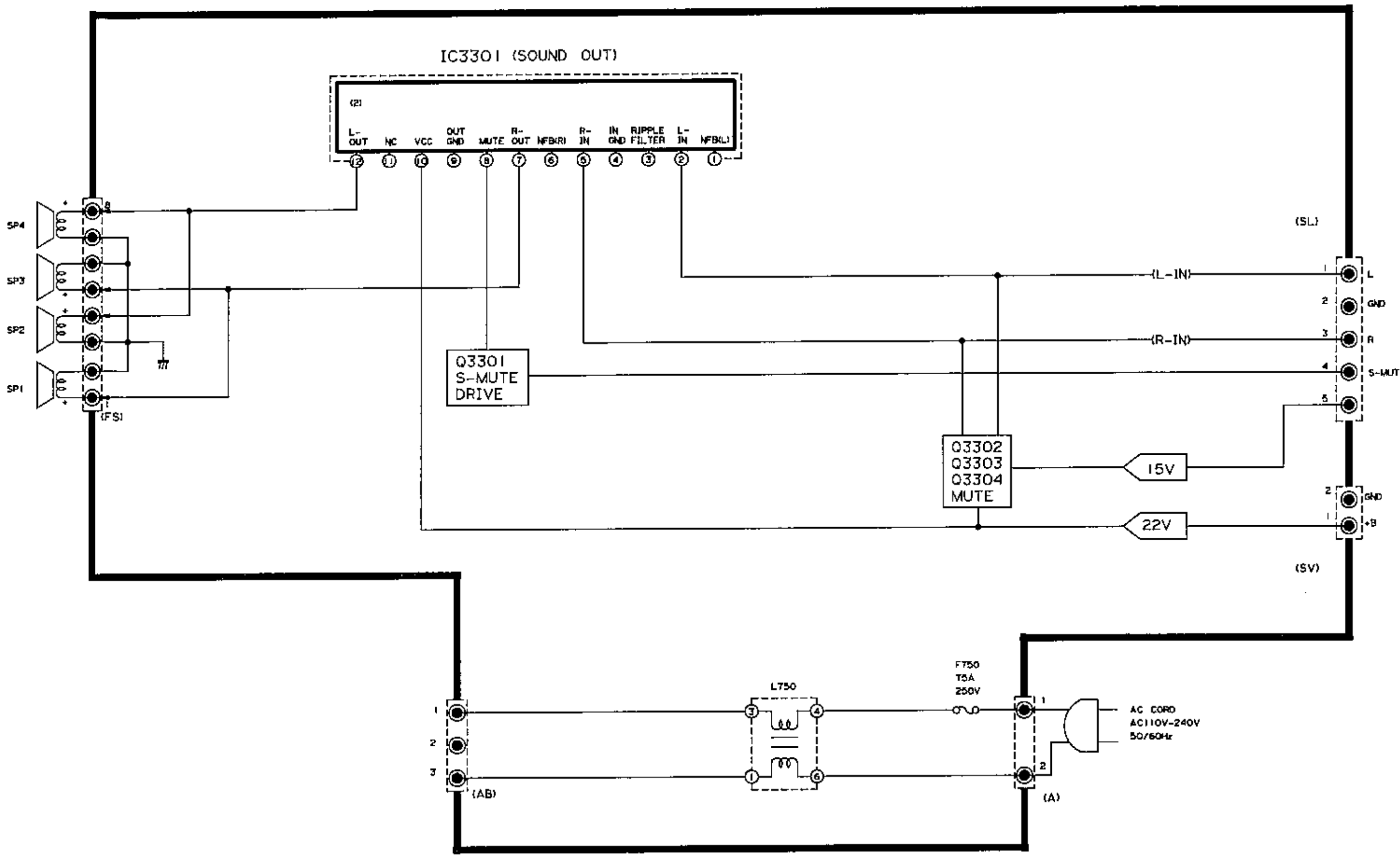
PWB-C (CRT UNIT)
DUNTK9486WEV2/V1



PWB-D (FRONT UNIT)
DUNTK9480WEV2/V1



PWB-E (S-OUT UNIT)
DUNTK9481WEV1



PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. **MODEL NUMBER**
2. **REF. NO.**
3. **PART NO.**
4. **DESCRIPTION**

MARK ★ : SPARE PARTS-DELIVERY SECTION.

PICTURE TUBE

Ref. No.	Part No.	★	Description	Code
⚠	VB68QBC220X1E	R	Picture Tube (29RN1c)	CV
⚠	VB68QBC220X*S	R	Picture Tube (29RN1F/G)	CV
⚠	VB59LGV10X/1E	R	Picture Tube (25RN1)	CR
⚠	RCiLG0051PEZZ	R	Degaussing Coil (29RN1)	AT
⚠	RCiLG0044PEZZ	R	Degaussing Coil (25RN1)	AT
⚠	RCiLH1858CEN1	R	Deflfction Yoke (29RN1)	BK
⚠	RCiLH0166PEZZ	R	Deflfction Yoke (25RN1)	BK
	LHLDW0003PEKZ	R	ADG Coil Holder, x4	AB
	PMAGF3038CEZZ	R	Purity Magnet	AL
	PMAGG3002CEZZ	R	Magnet	AC
	PSPAG0003PEZZ	R	Wedge(Gum), x3	AD
	QEARC2901PEZZ	R	Graounding Strap (29RN1)	AK
	QEARC2501PEZZ	R	Graounding Strap (25RN1)	AK

PRINTED WIRING BOARD ASSEMBLY (NOT REPLACEMENT ITEM)

Ref. No.	Part No.	★	Description	Code
PWB-A	DUNTK9482WEW8	-	Main Unit (25RN1)	—
PWB-A	DUNTK9482WEV4	-	Main Unit (29RN1)	—
PWB-B	DUNTK9483FMV2	-	Main 2 Unit	—
PWB-C	DUNTK9486WEV1	-	CRT Socket Unit	—
PWB-D	DUNTK9480FMV1	-	FRONT Unit (29RN1)	—
PWB-D	DUNTK9480FMV2	-	FRONT Unit (25RN1)	—
PWB-E	DUNTK9481FMV1	-	S-OUT Unit	—
PWB-H	DUNTK9547WEV3	-	VM Unit (25RN1)	—
PWB-H	DUNTK9547WEV0	-	VM Unit (29RN1)	—

更换零件表

更换零件

本维修说明书对具有特别安全要求的零件均用标记加以识别：在此更换零件表中，具有特别安全要求的电路元件均用⚠标记以便注意识别。更换零件时，为了用户的安全以及电视机原有的工作性能，务请使用夏普规定零件。否则，可能有导致触电、火灾或其他不测事故发生的可能。

更换零件的订货方法

为了能迅速而确实地接受订货、以及正确无误地按时交货，在订货时请将下列各项明确告知。

1. 型号
2. 参考编号
3. 零件编号
4. 零件名称

附★记号为备用部件的交货部门

PWB-A DUNTK9482WEW8/V4 MAIN 1 UNIT

TUNER AND ASSEMBLY

NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT INDEPENDENTLY.

Ref. No.	Part No.	★	Description	Code
⚠ TU201	VTUVTST6HD64/	R	Tuner	BF

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC203	RH-iX0249CEZZ	R	I.C.	AE
IC302	VHiTDA7429S-1	R	I.C.	AG
IC402	VHiM51497L/-1	R	M51497L	AL
IC501	VHiTDA8351A-1	R	TDA8351A (25RN1)	AT
IC501	VHiTDA8350Q-1	R	TDA8350Q (29RN1)	AN
IC701	VHiSTR6656/-1	R	I.C.	AZ
IC703	VHiSE120N//-1	R	SE120N	AG
IC704	VHiKA7812Pi-1	R	KIA7812PI	AE
IC705	VHiPQ12RD11-1	R	PQ12RD11	AG
IC706	VHiPQ09RD11-1	R	PQ09RD11	AG
IC707	VHiPQ05RD11-1	R	PQ05RD11	AG

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q210	VS2SC1906//1E	R	2SC1906	AC
Q303	VS2SC1815GW-1	R	2SC1815GW	AB
Q304	VS2SC1815GW-1	R	2SC1815GW	AB
Q404	VS2SA1015Y/1E	R	2SA1015Y	AC
Q405	VS2SC1815GW-1	R	2SC1815GW	AB
Q406	VS2SC1815GW-1	R	2SC1815GW	AB
Q407	VS2SK583///-1	R	2SK583	AE
Q502	VS2SA1015Y/1E	R	2SA1015Y	AC
⚠ Q605	VS2SC3886A/1E	R	2SC3886A	AP
Q606	VS2SC3808//-1	R	2SC3808	AH
Q701	VS2SA1015Y/1E	R	2SA1015Y	AC
Q702	VS2SC1815GW-1	R	2SC1815GW	AB
Q703	VS2SC1815GW-1	R	2SC1815GW	AB
Q1005	VS2SA1015Y/1E	R	2SA1015Y	AC

DIODES

Ref. No.	Part No.	★	Description	Code
D202	RH-EX0619GEZZ	R	Zener Diode	AA
D203	RH-EX0619GEZZ	R	Zener Diode	AA

PWB-A DUNTK9482WEW8/V4 MAIN 1 UNIT (Continued)

Ref. No.	Part No.	★	Description	Code
D310	RH-EX0628GEZZ	R	Zener Diode	AC
D311	RH-EX0628GEZZ	R	Zener Diode	AC
D312	RH-EX0628GEZZ	R	Zener Diode	AC
D313	RH-EX0628GEZZ	R	Zener Diode	AC
D401	RH-EX0628GEZZ	R	Zener Diode	AC
D402	RH-EX0628GEZZ	R	Zener Diode	AC
D403	RH-EX0628GEZZ	R	Zener Diode	AC
D503	RH-DX0475CEZZ	R	Diode	AB
D505	RH-EX0021GEZZ	R	Zener Diode (29RN1)	AD
D601	RH-EX0651GEZZ	R	Zener Diode	AB
D602	RH-DX0127CEZZ	R	Diode	AC
D603	RH-EX0628GEZZ	R	Zener Diode	AC
D604	RH-DX0475CEZZ	R	Diode	AB
D605	RH-DX0302CEZZ	R	Diode	AC
D606	RH-DX0229CEZZ	R	Diode (29RN1)	AF
D607	RH-DX0255CEZZ	R	Diode	AC
D608	RH-DX0475CEZZ	R	Diode	AB
D609	RH-DX0127CEZZ	R	Diode	AC
D610	RH-DX0279CEZZ	R	Diode	AB
D611	RH-DX0475CEZZ	R	Diode	AB
D616	RH-DX0475CEZZ	R	Diode	AB
D701	RH-DX0474CEZZ	R	Diode	AE
D702	RH-DX0475CEZZ	R	Diode	AB
D703	RH-EX0619GEZZ	R	Zener Diode	AA
D704	RH-DX0478CEZZ	R	Diode	AL
D708	RH-EX0641GEZZ	R	Zener Diode	AA
D709	RH-DX0471CEZZ	R	Diode	AE
D710	RH-DX0471CEZZ	R	Diode	AE
D711	RH-DX0471CEZZ	R	Diode	AE
D712	RH-EX0622GEZZ	R	Zener Diode	AA
D713	RH-DX0130CEZZ	R	Diode	AE
D714	RH-DX0229CEZZ	R	Diode	AF
D715	RH-DX0355CEZZ	R	Diode	AF
D716	VHDRL3Z////-1	R	Diode	AE
D717	VHDRL3Z////-1	R	Diode	AE
D718	RH-DX0475CEZZ	R	Diode	AB
D719	RH-DX0475CEZZ	R	Diode	AB
D720	RH-DX0475CEZZ	R	Diode	AB
D721	RH-DX0475CEZZ	R	Diode	AB
D1050	RH-DX0475CEZZ	R	Diode	AB
D1051	RH-DX0475CEZZ	R	Diode	AB
D1052	RH-EX0628GEZZ	R	Zener Diode	AC
⚠ IC702	RH-FX0024CEZZ	R	PC113L	AG

COILS

Ref. No.	Part No.	★	Description	Code
JA406	VP-XF180K0000	R	Peaking 18µH	AB
L202	VP-XF1R2K0000	R	Peaking 1.2µH	AB
L203	VP-XF150K0000	R	Peaking 15µH	AB
L204	VP-MK100K0000	R	Peaking 10µH	AB
L601	RCiLZ0015PEZZ	R	Coil (25RN1)	AL
L601	RCiLZ0012PEZZ	R	Coil (29RN1)	AL
L603	RCiLZ0013CEZZ	R	Coil (25RN1)	AM
L603	RCiLZ0822CEZZ	R	Coil (29RN1)	AL
L604	VP-CF390K0000	R	Peaking 39µH	AB
L701	RCiLP0226CEZZ	R	Coil	AD

FILTER

Ref. No.	Part No.	★	Description	Code
CF401	RFiLA0020CEZZ	R	Filter	AD

TRANSFORMERS

Ref. No.	Part No.	★	Description	Code
⚠ T601	RTRNF0160PEZZ	R	H-VOLT Transformer	BE
⚠ T602	RTRNZ0343CEZZ	R	Transformer	AG
⚠ T701	RTRNZ0128PEZZ	R	Transformer	AX

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C220	VCEAGA1CW226M	R	22 16V Electrolytic	AB
C221	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C222	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C223	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C224	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C225	VCEAGA1CW337M	R	330 16V Electrolytic	AC
C227	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C228	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C229	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C230	VCQYTA1HM182J	R	1800p 50V Mylar	AA
C231	VCKYD41HB102K	R	1000p 50V Ceramic	AA
C320	VCQYTA1HM223J	R	0.022 50V Mylar	AA
C321	VCQYTA1HM223J	R	0.022 50V Mylar	AA
C322	VCQYTA1HM472J	R	4700p 50V Mylar	AB
C323	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C324	VCQYTA1HM122J	R	1200p 50V Mylar	AA
C325	VCQYTA1HM562J	R	5600p 50V Mylar	AA
C326	VCFYFA1HA684J	R	0.68 50V M.Polypro	AD
C327	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C328	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C329	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C330	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C331	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C332	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C333	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C334	VCQYTA1HM223J	R	0.022 50V Mylar	AA
C335	VCQYTA1HM183J	R	0.018 50V Mylar	AB
C336	VCQYTA1HM223J	R	0.022 50V Mylar	AA
C337	VCQYTA1HM183J	R	0.018 50V Mylar	AB
C338	VCQYTA1HM562J	R	5600p 50V Mylar	AA
C339	VCQYTA1HM562J	R	5600p 50V Mylar	AA
C340	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C341	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C342	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C343	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C344	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C345	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C346	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C347	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C348	VCFYFA1HA474J	R	0.47 50V M.Polypro	AC
C349	VCFYFA1HA474J	R	0.47 50V M.Polypro	AC
C350	VCFYFA1HA474J	R	0.47 50V M.Polypro	AC
C351	VCFYFA1HA474J	R	0.47 50V M.Polypro	AC
C352	VCFYFA1HA474J	R	0.47 50V M.Polypro	AC
C353	VCFYFA1HA474J	R	0.47 50V M.Polypro	AC
C354	VCEAGA1CW226M	R	22 16V Electrolytic	AB
C355	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C356	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C417	VCEAGA1AW477M	R	470 10V Electrolytic	AC
C418	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C419	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
C420	VCKYPA1HB331K	R	330p 50V Ceramic	AA
C421	VCKYPA1HB182K	R	1800p 50V Ceramic	AA
C422	VCEAGA1HW224M	R	0.22 50V Electrolytic	AA
C423	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C424	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C425	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C504	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C505	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C506	VCEAGA1EW108M	R	1000 25V Electrolytic	AD
C508	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C509	VCFYFA1HA104J	R	0.1 50V M.Polypro (29RN1)	AA
C510	VCKYPA1HB152K	R	1500p 50V Ceramic (29RN1)	AA
C511	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C512	VCQYSG2AA473K	R	0.047 100V Mylar	AC
C513	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C514	VCKYPA1HB102K	R	1000p 50V Ceramic	AA

PWB-A DUNTK9482WEW8/V4 MAIN 1 UNIT (Continued)

Ref. No.	Part No.	★	Description			Code
C515	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C516	VCFYAA2AA103J	R	0.01	100V	M.Polypro	AF
C610	VCFPPD2DB394J	R	0.39 (29RN1)	200V	M.Polypro	AE
C610	VCFPPC2DB184J	R	0.18 (25RN1)	200V	M.Polypro	AE
C611	VCQPSC2JA393K	R	0.039 (29RN1)	630V	Mylar	AB
C612	VCKYPH3DB561K	R	560p (29RN1)	2000V	Ceramic	AC
C612	RC-KZ0039CEZZ	R	680p (25RN1)	2kV	Ceramic	AB
C613	VCFPPD3CA103H	R	0.01 (29RN1)	1600V	M.Polypro	AE
C613	VCFPPD3CA622H	R	0.0062 (25RN1)	1600V	M.Polypro	AE
C614	VCFPPD3CA113H	R	0.011 (29RN1)	1600V	M.Polypro	AE
C614	VCFPPD3CA682H	R	0.0068 (25RN1)	1600V	M.Polypro	AE
C615	VCFYFA1HA104J	R	0.1	50V	M.Polypro	AA
C616	VCKYPA1HB472K	R	4700p	50V	Ceramic	AA
C617	VCFPPD2DB474J	R	0.47	200V	M.Polypro	AE
C618	VCFYSB2EB224K	R	0.22	250V	M.Polypro	AD
C619	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C620	VCEAGA2AW106M	R	10	100V	Electrolytic	AC
C621	VCEAGA1HW106M	R	10	50V	Electrolytic	AC
C622	VCKYPA1HB102K	R	1000p	50V	Ceramic	AA
C623	VCEAGA1EW227M	R	220	25V	Electrolytic	AC
C624	VCQYTA1HM273J	R	0.027	50V	Mylar	AB
C625	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C626	VCEAGH1EW228M	R	2200	25V	Electrolytic	AE
C627	RC-KZ0039CEZZ	R	680p	2kV	Ceramic	AB
C628	VCFPPD3CA472J	R	4700p	1600V	M.Polypro	AD
C629	VCFYAC2AA475J	R	4.7 (29RN1)	100V	M.Polypro	AL
C629	VCFYAB2AA335J	R	3.3 (25RN1)	100V	M.Polypro	AL
C630	VCEAGA1HW335M	R	3.3	50V	Electrolytic	AB
C631	VCKYPA1HB102K	R	1000p	50V	Ceramic	AA
C632	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C633	VCEAGA2EW336M	R	33	250V	Electrolytic	AD
C634	VCKYPA2HB561K	R	560p	500V	Ceramic	AA
C635	VCFPPD2DB394J	R	0.39	200V	M.Polypro	AE
C636	VCFYFA1HA104J	R	0.1	50V	M.Polypro	AA
C703	VCQPSC2JA333K	R	0.033	630V	Mylar	AB
C704	RC-KZ0035CEZZ	R	220p	2kV	Ceramic	AB
C705	VCKYPA1HB222K	R	2200p	50V	Ceramic	AA
C706	VCKYPH3DB561K	R	560p	2000V	Ceramic	AC
C707	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C708	VCEAGA1VW107M	R	100	35V	Electrolytic	AC
C709	RC-KZ0035CEZZ	R	220p	2kV	Ceramic	AB
C710	RC-KZ0016CEZZ	R	0.01	1.5kV	Ceramic	AC
C711	RC-KZ0016CEZZ	R	0.01	1.5kV	Ceramic	AC
C712	RC-KZ0016CEZZ	R	0.01	1.5kV	Ceramic	AC
C713	RC-KZ0016CEZZ	R	0.01	1.5kV	Ceramic	AC
C714	VCFYFA1HA104J	R	0.1	50V	M.Polypro	AA
C715	VCFYFA1HA104J	R	0.1	50V	M.Polypro	AA
C716	VCEAGA1CW477M	R	470	16V	Electrolytic	AC
C717	VCEAGA1CW477M	R	470	16V	Electrolytic	AC
C718	VCEAGA1CW477M	R	470	16V	Electrolytic	AC
⚠ C719	RC-KZ017SCEZZ	R	680p	4kV	Special	AD
C720	VCEAGA1CW477M	R	470	16V	Electrolytic	AC
C721	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C722	RC-KZ0024CEZZ	R	1000p	2kV	Ceramic	AC
C723	RC-KZ0037CEZZ	R	390p	2kV	Ceramic	AB
C724	VCEAGA1EW108M	R	1000	25V	Electrolytic	AD
C725	VCEAGH1HW228M	R	2200	50V	Electrolytic	AG
C726	VCEAGA1CW227M	R	220	16V	Electrolytic	AC
C727	RC-EZ0400CEZZ	R	270	200V	Electrolytic	AM
C728	VCEAGW2CW227M	R	220	160V	Electrolytic	AK
C730	RC-EZ0695CEZZ	R	330	450V	Electrolytic	AW
C731	RC-EZ0695CEZZ	R	330	450V	Electrolytic	AW
C733	VCKYD41HB102K	R	1000p	50V	Ceramic	AA
C734	VCKYPA1HB102K	R	1000p	50V	Ceramic	AA
C735	VCEAGA1HW475M	R	4.7	50V	Electrolytic	AB
C738	VCFYFA1HA474J	R	0.47	50V	M.Polypro	AC
C739	VCKYPA2HB222K	R	2200p	500V	Ceramic	AA
C1001	VCEAGA1AW227M	R	220	10V	Electrolytic	AB
C1002	VCEAGA1CW476M	R	47	16V	Electrolytic	AB
C1426	VCQYTA1HM223J	R	0.022	50V	Mylar	AA

RESISTORS

Ref. No.	Part No.	★	Description			Code
R15	VRD-RA2BE270J	R	27	1/8W	Carbon	AA
R221	VRD-RA2BE151J	R	150	1/8W	Carbon	AA
R222	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R224	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R226	VRD-RA2BE122J	R	1.2k	1/8W	Carbon	AA
R227	VRS-VV3DB153J	R	15k	2W	Metal Oxide	AA
R228	VRD-RA2BE273J	R	27k	1/8W	Carbon	AA
R229	VRD-RA2BE223J	R	22k	1/8W	Carbon	AA
R230	VRD-RA2BE181J	R	180	1/8W	Carbon	AA
R320	VRD-RA2BE222J	R	2.2k	1/8W	Carbon	AA
R321	VRD-RA2BE682J	R	6.8k	1/8W	Carbon	AA
R322	VRD-RA2BE562J	R	5.6k	1/8W	Carbon	AA
R323	VRD-RA2BE562J	R	5.6k	1/8W	Carbon	AA
R324	VRD-RA2BE272J	R	2.7k	1/8W	Carbon	AA
R325	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R326	VRD-RA2BE564J	R	560k	1/8W	Carbon	AA
R327	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R328	VRD-RA2BE564J	R	560k	1/8W	Carbon	AA
R329	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R330	VRD-RA2BE272J	R	2.7k	1/8W	Carbon	AA
R331	VRD-RA2BE564J	R	560k	1/8W	Carbon	AA
R332	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R333	VRD-RA2BE331J	R	330	1/8W	Carbon	AA
R334	VRD-RA2BE331J	R	330	1/8W	Carbon	AA
R335	VRD-RA2BE104J	R	100k	1/8W	Carbon	AA
R336	VRD-RA2BE104J	R	100k	1/8W	Carbon	AA
R337	VRD-RA2BE331J	R	330	1/8W	Carbon	AA
R338	VRD-RA2BE331J	R	330	1/8W	Carbon	AA
R339	VRD-RA2BE473J	R	47k	1/8W	Carbon	AA
R340	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R341	VRD-RA2BE473J	R	47k	1/8W	Carbon	AA
R342	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R343	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R344	VRD-RA2BE564J	R	560k	1/8W	Carbon	AA
R345	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R347	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R348	VRD-RA2BE681J	R	680	1/8W	Carbon	AA
R421	VRD-RA2EE680J	R	68	1/4W	Carbon	AA
R422	VRD-RA2BE104J	R	100k	1/8W	Carbon	AA
R427	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R428	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R429	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R430	VRD-RA2BE184J	R	180k	1/8W	Carbon	AA
R431	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R432	VRD-RA2BE271J	R	270	1/8W	Carbon	AA
R433	VRD-RA2BE562J	R	5.6k	1/8W	Carbon	AA
R435	VRD-RA2BE684J	R	680k	1/8W	Carbon	AA
R440	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R441	VRD-RA2BE222J	R	2.2k	1/8W	Carbon	AA
R442	VRD-RA2BE392J	R	3.9k	1/8W	Carbon	AA
R443	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R444	VRD-RA2BE223J	R	22k	1/8W	Carbon	AA
R445	VRD-RA2BE223J	R	22k	1/8W	Carbon	AA
R446	VRD-RA2BE333J	R	33k	1/8W	Carbon	AA

PWB-A DUNTK9482WEW8/V4 MAIN 1 UNIT (Continued)

Ref. No.	Part No.	★	Description	Code
R447	VRD-RA2EE750J	R	75 1/4W Carbon	AA
R448	VRD-RA2EE750J	R	75 1/4W Carbon	AA
R503	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA
R504	VRN-VV3AB2R2J	R	2.2 1W Metal Film	AA
R505	VRN-VV3AB1R2J	R	1.2 1W Metal Film (29RN1)	AA
R505	VRN-VV3AB2R2J	R	2.2 1W Metal Film (25RN1)	AA
R506	VRD-RA2BE823J	R	82k 1/8W Carbon (29RN1)	AA
R507	VRD-RA2BE472J	R	4.7k 1/8W Carbon (29RN1)	AA
R508	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R509	VRS-VV3DB151J	R	150 2W Metal Oxide	AA
R510	VRD-RA2BE180J	R	18 1/8W Carbon	AA
R511	VRD-RA2BE562J	R	5.6k 1/8W Carbon (25RN1)	AA
⚠ R512	RR-XZ0020CEZZ	R	39 1/4W Fuse Resistor	AB
R612	VRD-RA2BE275J	R	2.7 M 1/8W Carbon	AA
R613	VRS-VV3DB561J	R	560 2W Metal Oxide	AA
R614	VRW-KQ41C3R3K	R	3.3 15W Cement	AG
R615	VRD-RA2BE563J	R	56k 1/8W Carbon	AA
R616	VRN-RV3DB1R0J	R	1 2W Metal Film (29RN1)	AB
R616	VRN-RV3DB2R2J	R	2.2 2W Metal Film (25RN1)	AB
R617	VRD-RA2EE101J	R	100 1/4W Carbon	AA
R618	VRD-RA2EE101J	R	100 1/4W Carbon	AA
R619	VRD-RA2BE104J	R	100k 1/8W Carbon	AA
⚠ R620	RR-XZ0016CEZZ	R	1 1/2W Fuse Resistor	AB
R621	VRD-RA2BE104J	R	100k 1/8W Carbon	AA
R622	VRS-SU2HB102J	R	1k 1/2W Metal Oxide	AA
R623	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
R624	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R625	VRD-RA2EE125J	R	1.2 M 1/4W Carbon	AA
R626	VRD-RA2BE274J	R	270k 1/8W Carbon	AA
R627	VRD-RA2BE473J	R	47k 1/8W Carbon (29RN1)	AA
R627	VRD-RA2BE563J	R	56k 1/8W Carbon (25RN1)	AA
R628	VRD-RA2BE334J	R	330k 1/8W Carbon (29RN1)	AA
R628	VRD-RA2BE474J	R	470k 1/8W Carbon (25RN1)	AA
R629	VRS-VV3AB472J	R	4.7k 1W Metal Oxide	AA
R630	VRD-RA2EE102J	R	1k 1/4W Carbon	AA
R632	VRD-RM2HD820J	R	82 1/2W Carbon	AA
R633	VRD-RM2HD470J	R	47 1/2W Carbon	AA
⚠ R636	RR-XZ0029CEZZ	R	3.3 1/2W Fuse Resistor	AB
R637	VRW-KX3HC180J	R	18 5W Cement	AE
⚠ R638	RR-XZ0071CEZZ	R	1 1W Fuse Resistor	AC
R643	VRS-KT3LB120J	R	12 3W Metal Oxide (29RN1)	AC
R643	VRS-KT3LB101J	R	100 3W Metal Oxide (25RN1)	AC
R644	VRD-RA2BE391J	R	390 1/8W Carbon	AA
R701	VRS-KT3LB103J	R	10k 3W Metal Oxide	AF
R702	VRN-SV2HBR27J	R	0.27 1/2W Metal Film	AB
R703	VRD-RM2HD684J	R	680k 1/2W Carbon	AA
R704	VRD-RA2BE333J	R	33k 1/8W Carbon	AA
R705	VRN-SV2HBR27J	R	0.27 1/2W Metal Film	AB
R706	VRN-SV2HBR27J	R	0.27 1/2W Metal Film	AB
R707	VRD-RA2BE681J	R	680 1/8W Carbon	AA
R708	VRD-RA2BE152J	R	1.5k 1/8W Carbon	AA
R709	VRD-RA2BE152J	R	1.5k 1/8W Carbon	AA
R710	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R712	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R713	VRN-KT3LB4R7J	R	4.7 3W Metal Film	AG
R714	VRD-RA2BE562J	R	5.6k 1/8W Carbon	AA
R715	VRD-RA2BE123J	R	12k 1/8W Carbon	AA
⚠ R716	VRC-UA2HG825K	R	8.2 M 1/2W Solid	AA
⚠ R717	VRC-UA2HG825K	R	8.2 M 1/2W Solid	AA
R718	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R719	VRD-RA2BE332J	R	3.3k 1/8W Carbon	AA
R720	VRN-VV3DB6R8J	R	6.8 2W Metal Film	AB
R721	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R722	VRS-SV3AB683J	R	68k 1W Metal Oxide	AA
R723	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R724	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R725	VRN-KT3LB2R2J	R	2.2 3W Metal Film	AF
R726	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R732	VRN-KT3LB6R8J	R	6.8 3W Metal Film	AG
R1001	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R1002	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R1003	VRD-RA2BE562J	R	5.6k 1/8W Carbon	AA
R1004	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R1005	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R1020	VRD-RM2HD330J	R	33 1/2W Carbon	AA
R1021	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1022	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1445	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
R1446	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
R1448	VRD-RA2BE154J	R	150k 1/8W Carbon	AA

SWITCH

Ref. No.	Part No.	★	Description	Code
S1006	QSW-B0015CEZZ	R	Service Switch	AC

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
FB601	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB602	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB701	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB702	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB703	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB704	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB705	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB706	RBLN-0037CEZZ	R	Ferrite Bead	AB
J402	QTANJ0639CEZZ	R	Terminal	AL
P201	QPLGN0261CEZZ	R	Plug, 2pin	AB
P202	QPLGN2059REZZ	R	Plug, 20pin	AE
P203	QPLGN2059REZZ	R	Plug, 20pin	AE
P204	QPLGZ0360GEZZ	R	Plug, 3pin	AB
P205	QPLGN2059REZZ	R	Plug, 20pin	AE
P303	QPLGN0561CEZZ	R	Plug, 5pin (SL)	AB
P401	QPLGN0561CEZZ	R	Plug, 5pin (AY)	AB
P601	QPLGN0160FJZZ	R	Plug, 1pin	AD
P602	QPLGN0361CEZZ	R	Plug, 3pin (H)	AB
P701	QPLGN0269GEZZ	R	Plug, 2pin (SV)	AB
P702	QPLGN0304CEZZ	R	Plug, 3pin (AA)	AB
P703	QPLGN0761CEZZ	R	Plug, 7pin (VM)	AD
P1001	QPLGN0761CEZZ	R	Plug, 7pin (FR)	AD
P1002	QPLGN0461CEZZ	R	Plug, 4pin (BC)	AB
SC601	QTiPM0083CEZZ	R	Tip (L2)	AB
	PRDAR0244PEFW	R	Heat Sink	AN
	PRDAR0245PEFW	R	Heat Sink	AH
	PRDAR0246PEFW	R	Heat Sink	AN
	PRDAR0250PEFW	R	Heat Sink	AM
	PRDAR0253PEFW	R	Heat Sink	AE
	LHLDW1064PEKZ	R	Holder	AC

——— End of Main 1 Unit ———

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MAIN 2 UNIT

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC201	VHiTDA8375A-3	R	TDA8375AH/N3	BA
IC202	VHiKA7808Pi-1	R	KIA7808PI	AF
IC301	VHiM52317SP-1	R	M52317SP	AK
IC401	VHiTDA4671/-1	R	I.C.	AZ
IC801	VHiTDA4665T-1	R	TDA4665T/V4	AN
IC901	VHiTDA8395T-1	R	TDA8395T/N2	AR
IC1001	RH-iX3007CEZZ	R	I.C.	AZ
IC1002	VHiS24C04A/-1	R	S-24C04AFJ-TB	AL
IC1003	VHiKiA7045P-1	R	KIA7045P	AD
IC1004	VHiKA7805Pi-1	R	KIA7805PI	AE

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q201	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q202	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q203	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q204	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q401	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q402	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q403	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q601	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q602	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q603	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q1001	VS2SA1037KQ-1	R	VS2SA1037KQ-1	AA
Q1002	VS2SC2412KQ-1	R	2SC2412KQ	AA
Q1004	VS2SC2412KQ-1	R	2SC2412KQ	AA

DIODES

Ref. No.	Part No.	★	Description	Code
D201	VHD1SS152//-1	R	Diode	AB
D204	RH-DX0475CEZZ	R	Diode	AB
D1005	RH-EX0633GEZZ	R	Zener Diode	AA
D1006	RH-EX0633GEZZ	R	Zener Diode	AA
D1009	RH-EX0619GEZZ	R	Zener Diode	AA
D1010	RH-EX0619GEZZ	R	Zener Diode	AA
D1011	RH-EX0619GEZZ	R	Zener Diode	AA
D1012	RH-EX0619GEZZ	R	Zener Diode	AA
D1013	RH-EX0619GEZZ	R	Zener Diode	AA
D1014	RH-EX0619GEZZ	R	Zener Diode	AA
D1015	RH-EX0619GEZZ	R	Zener Diode	AA
D1016	RH-EX0619GEZZ	R	Zener Diode	AA
D1017	RH-EX0619GEZZ	R	Zener Diode	AA
D1020	RH-DX0475CEZZ	R	Diode	AB
D1023	RH-EX0619GEZZ	R	Zener Diode	AA
D1024	RH-EX0619GEZZ	R	Zener Diode	AA
D1025	RH-EX0619GEZZ	R	Zener Diode	AA
D1026	RH-EX0619GEZZ	R	Zener Diode	AA
D1027	RH-EX0619GEZZ	R	Zener Diode	AA
D1028	RH-EX0619GEZZ	R	Zener Diode	AA
D1031	RH-DX0475CEZZ	R	Diode	AB
D1033	RH-EX0619GEZZ	R	Zener Diode	AA
D1034	RH-EX0619GEZZ	R	Zener Diode	AA
D1035	RH-EX0619GEZZ	R	Zener Diode	AA
D1038	RH-DX0475CEZZ	R	Diode	AB
D1039	RH-EX0619GEZZ	R	Zener Diode	AA
D1040	RH-EX0619GEZZ	R	Zener Diode	AA
D1041	RH-DX0475CEZZ	R	Diode	AB
D1043	RH-EX0619GEZZ	R	Zener Diode	AA

CRYSTALS

Ref. No.	Part No.	★	Description	Code
X801	RCRSB0008PEZZ	R	Crystal, 4.43MHz	AH
X802	RCRSB0009PEZZ	R	Crystal, 3.58MHz	AL

COILS

Ref. No.	Part No.	★	Description	Code
L201	VP-XF4R7K0000	R	Peaking 4.7μH	AB
L205	VP-XF120K0000	R	Peaking 12μH	AB
L301	VP-XF120K0000	R	Peaking 12μH	AB
L801	VP-XF1R8K0000	R	Peaking 1.8μH	AB
L802	VP-XF1R8K0000	R	Peaking 1.8μH	AB
L803	VP-XF1R8K0000	R	Peaking 1.8μH	AB
L1001	VP-XF1R0K0000	R	Peaking 1μH	AB

FILTERS

Ref. No.	Part No.	★	Description	Code
CF201	RFiLC0011PEZZ	R	Filter	AH
CF202	RFiLC0006PEZZ	R	Filter	AF
CF203	RFiLC0004PEZZ	R	Filter	AE
CF204	RFiLC0228CEZZ	R	Filter	AF
CF301	RFiLC0008PEZZ	R	Filter	AF
CF302	RFiLC0010PEZZ	R	Filter	AF
CF303	RFiLC0007PEZZ	R	Filter	AF
CF304	RFiLA0072CEZZ	R	Filter	AE
CF305	RFiLC0009PEZZ	R	Filter	AF
CF1001	RFiLA0084CEZZ	R	Filter	AE
SF201	RFiLC0015PEZZ	R	Filter	AR

TRANSFORMER

Ref. No.	Part No.	★	Description	Code
T201	RCiLD0004PEZZ	R	Detection Coil	AF

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C201	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C202	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB
C203	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C204	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C205	VCCCCY1HH100D	R	10p 50V Ceramic	AA
C206	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C207	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C208	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C209	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C210	VCFYFA1HA474J	R	0.47 50V M.Polypro	AC
C211	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB
C212	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C213	VCFYFA1HA104J	R	0.1 50V M.Polypro	AA
C214	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C215	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB
C216	VCFYFA1HA334J	R	0.33 50V M.Polypro	AB
C217	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C218	VCEAGA1AW477M	R	470 10V Electrolytic	AC
C219	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C301	VCKYCY1HB332K	R	3300p 50V Ceramic	AA
C302	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C303	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C304	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C305	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C306	VCCCCY1HH680J	R	68p 50V Ceramic	AA
C307	VCCCPA1HH330J	R	33p 50V Ceramic	AA
C308	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C309	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C310	VCCCCY1HH180J	R	18p 50V Ceramic	AA
C311	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C313	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C314	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C315	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C317	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C401	VCKYCY1HF473Z	R	0.047 50V Ceramic	AA
C402	VCKYCY1HF473Z	R	0.047 50V Ceramic	AA
C403	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C404	VCEAGA1AW107M	R	100 10V Electrolytic	AB
C405	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C406	VCEAGA1AW477M	R	470 10V Electrolytic	AC
C407	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
C408	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C409	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C410	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C411	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C412	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C413	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C414	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA

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Ref. No.	Part No.	★	Description			Code
C415	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C416	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C501	VCFYFA1HA104J	R	0.1	50V	M.Polypro	AA
C502	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C503	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C601	VCEAGA1CW107M	R	100	16V	Electrolytic	AB
C602	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C603	VCKYCY1HB222K	R	2200p	50V	Ceramic	AA
C604	VCKYCY1HB472K	R	4700p	50V	Ceramic	AA
C605	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C606	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C607	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C608	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C609	VCCCCY1HH180J	R	18p	50V	Ceramic	AA
C801	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C802	VCKYCY1HB472K	R	4700p	50V	Ceramic	AA
C803	VCCCCY1HH180J	R	18p	50V	Ceramic	AA
C804	VCCCCY1HH180J	R	18p	50V	Ceramic	AA
C805	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C806	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C807	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C808	VCEAGA1CW476M	R	47	16V	Electrolytic	AB
C809	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C810	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C811	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C812	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C813	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C901	VCEAGA1CW476M	R	47	16V	Electrolytic	AB
C902	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C903	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C904	VCKYCY1CF224Z	R	0.22	16V	Ceramic	AA
C1003	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C1004	VCKYCY1HB221K	R	220p	50V	Ceramic	AA
C1005	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C1006	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C1007	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C1008	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C1010	VCCCCY1HH220J	R	22p	50V	Ceramic	AA
C1011	VCCCCY1HH220J	R	22p	50V	Ceramic	AA
C1012	VCCCCY1HH220J	R	22p	50V	Ceramic	AA
C1013	VCCCCY1HH220J	R	22p	50V	Ceramic	AA
C1015	VCFYFA1HA334J	R	0.33	50V	M.Polypro	AB
C1016	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C1017	VCEAGA1AW477M	R	470	10V	Electrolytic	AC
C1018	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C1019	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C1042	VCCCCY1HH101J	R	100p	50V	Ceramic	AA
C1043	VCCCCY1HH100D	R	10p	50V	Ceramic	AA

RESISTORS

Ref. No.	Part No.	★	Description			Code
R201	VRS-CY1JF222J	R	2.2k	1/16W	Metal Oxide	AA
R202	VRS-CY1JF682J	R	6.8k	1/16W	Metal Oxide	AA
R203	VRS-CY1JF222J	R	2.2k	1/16W	Metal Oxide	AA
R204	VRS-CY1JF223J	R	22k	1/16W	Metal Oxide	AA
R205	VRS-CY1JF223J	R	22k	1/16W	Metal Oxide	AA
R206	VRS-CY1JF122J	R	1.2k	1/16W	Metal Oxide	AA
R207	VRS-CY1JF391J	R	390	1/16W	Metal Oxide	AA
R208	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R209	VRS-CY1JF181J	R	180	1/16W	Metal Oxide	AA
R210	VRD-RA2BE4R7J	R	4.7	1/8W	Carbon	AA
R211	VRS-CY1JF560J	R	56	1/16W	Metal Oxide	AA
R212	VRS-CY1JF182J	R	1.8k	1/16W	Metal Oxide	AA
R213	VRS-CY1JF181J	R	180	1/16W	Metal Oxide	AA
R214	VRS-CY1JF221J	R	220	1/16W	Metal Oxide	AA
R215	VRS-CY1JF470J	R	47	1/16W	Metal Oxide	AA
R216	VRS-CY1JF471J	R	470	1/16W	Metal Oxide	AA
R217	VRD-RA2BE2R2J	R	2.2	1/8W	Carbon	AA
⚠R218	RR-XZ0080CEZZ	R	4.7	1/2W	Fuse Resistor	AB
R219	VRS-CY1JF820J	R	82	1/16W	Metal Oxide	AA
R220	VRS-CY1JF181J	R	180	1/16W	Metal Oxide	AA
R301	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R302	VRS-CY1JF222J	R	2.2k	1/16W	Metal Oxide	AA
R303	VRS-CY1JF271J	R	270	1/16W	Metal Oxide	AA
R304	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R305	VRS-CY1JF821J	R	820	1/16W	Metal Oxide	AA
R306	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R307	VRS-CY1JF681J	R	680	1/16W	Metal Oxide	AA
R308	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R309	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R311	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R318	VRS-CY1JF100J	R	10	1/16W	Metal Oxide	AA
R401	VRS-CY1JF470J	R	47	1/16W	Metal Oxide	AA
R402	VRS-CY1JF331J	R	330	1/16W	Metal Oxide	AA
R403	VRS-CY1JF471J	R	470	1/16W	Metal Oxide	AA
R404	VRS-CY1JF471J	R	470	1/16W	Metal Oxide	AA
R406	VRS-CY1JF222J	R	2.2k	1/16W	Metal Oxide	AA
R407	VRS-CY1JF122J	R	1.2k	1/16W	Metal Oxide	AA
R408	VRS-CY1JF392J	R	3.9k	1/16W	Metal Oxide	AA
R410	VRD-RM2HD151J	R	150	1/2W	Carbon	AA
R411	VRS-CY1JF104J	R	100k	1/16W	Metal Oxide	AA
R412	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R413	VRS-CY1JF394J	R	390k	1/16W	Metal Oxide	AA
R414	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R415	VRS-CY1JF5R6J	R	5.6	1/16W	Metal Oxide	AA
R416	VRS-CY1JF100J	R	10	1/16W	Metal Oxide	AA
R417	VRS-CY1JF223J	R	22k	1/16W	Metal Oxide	AA
R418	VRS-CY1JF153J	R	15k	1/16W	Metal Oxide	AA
R419	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R420	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R501	VRS-CY1JF393F	R	39k	1/16W	Metal Oxide	AA
R601	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R602	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R603	VRD-RM2HD151J	R	150	1/2W	Carbon	AA
R604	VRS-CY1JF330J	R	33	1/16W	Metal Oxide	AA
R605	VRS-CY1JF273J	R	27k	1/16W	Metal Oxide	AA
R606	VRS-CY1JF153J	R	15k	1/16W	Metal Oxide	AA
R607	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R608	VRS-CY1JF182J	R	1.8k	1/16W	Metal Oxide	AA
R609	VRS-CY1JF1R0J	R	1	1/16W	Metal Oxide	AA
R611	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R801	VRS-CY1JF104J	R	100k	1/16W	Metal Oxide	AA
R802	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R803	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R804	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R805	VRS-CY1JF100J	R	10	1/16W	Metal Oxide	AA
R901	VRS-CY1JF100J	R	10	1/16W	Metal Oxide	AA
R1007	VRS-CY1JF563J	R	56k	1/16W	Metal Oxide	AA
R1012	VRS-CY1JF562J	R	5.6k	1/16W	Metal Oxide	AA
R1013	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1014	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R1015	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R1016	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R1017	VRS-CY1JF472J	R	4.7k	1/16W	Metal Oxide	AA
R1018	VRS-CY1JF222J	R	2.2k	1/16W	Metal Oxide	AA
R1023	VRS-CY1JF562J	R	5.6k	1/16W	Metal Oxide	AA
R1024	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1025	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R1026	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R1029	VRS-CY1JF562J	R	5.6k	1/16W	Metal Oxide	AA
R1030	VRS-CY1JF562J	R	5.6k	1/16W	Metal Oxide	AA
R1031	VRS-CY1JF562J	R	5.6k	1/16W	Metal Oxide	AA
R1032	VRS-CY1JF563J	R	56k	1/16W	Metal Oxide	AA
R1033	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1034	VRS-CY1JF563J	R	56k	1/16W	Metal Oxide	AA
R1036	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1037	VRS-CY1JF561J	R	560	1/16W	Metal Oxide	AA
R1040	VRS-CY1JF562J	R	5.6k	1/16W	Metal Oxide	AA

PWB-B DUNTK9483FMV2 MAIN 2 UNIT(Continued)

Ref. No.	Part No.	★	Description	Code
R1041	VRS-CY1JF103J	R	10k 1/16W Metal Oxide	AA
R1042	VRS-CY1JF562J	R	5.6k 1/16W Metal Oxide	AA
R1043	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1044	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide	AA
R1045	VRS-CY1JF103J	R	10k 1/16W Metal Oxide	AA
R1046	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R1048	VRS-CY1JF153J	R	15k 1/16W Metal Oxide	AA
R1049	VRS-CY1JF822J	R	8.2k 1/16W Metal Oxide	AA
R1050	VRS-CY1JF103J	R	10k 1/16W Metal Oxide	AA
R1051	VRS-CY1JF561J	R	560 1/16W Metal Oxide	AA
R1052	VRS-CY1JF561J	R	560 1/16W Metal Oxide	AA
R1053	VRS-CY1JF561J	R	560 1/16W Metal Oxide	AA
R1054	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide	AA
R1055	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide	AA
R1056	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide	AA
R1057	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide	AA
R1058	VRS-CY1JF562J	R	5.6k 1/16W Metal Oxide	AA
R1059	VRS-CY1JF392J	R	3.9k 1/16W Metal Oxide	AA
R1061	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1062	VRS-CY1JF103J	R	10k 1/16W Metal Oxide	AA
R1063	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1064	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1065	VRS-CY1JF392J	R	3.9k 1/16W Metal Oxide	AA
R1066	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1067	VRS-CY1JF682J	R	6.8k 1/16W Metal Oxide	AA
R1068	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1069	VRS-CY1JF392J	R	3.9k 1/16W Metal Oxide	AA
R1070	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1071	VRS-CY1JF682J	R	6.8k 1/16W Metal Oxide	AA
R1072	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R1073	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R1076	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1077	VRD-RM2HD470J	R	47 1/2W Carbon	AA
R1078	VRS-CY1JF333J	R	33k 1/16W Metal Oxide	AA
R1079	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R1086	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1087	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1089	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R1090	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R1092	VRS-CY1JF682J	R	6.8k 1/16W Metal Oxide	AA
R1094	VRD-RM2HD1R5J	R	1.5 1/2W Carbon	AA
R1095	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1096	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1099	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
P801	QPLGN0542CEZZ	R	Plug, 5pin (K)	AB
SC202	QSOCZ2050CEZZ	R	Socket, 20pin	AF
SC203	QSOCZ2050CEZZ	R	Socket, 20pin	AF
SC204	QSOCZ0360GEZZ	R	Socket, 3pin	AC
SC205	QSOCZ2050CEZZ	R	Socket, 20pin	AF
SLD201	PSLDM0254PEFW	R	Shield	AE
SLD202	PSLDM0255PEFW	R	Shield	AD
SLD1001	PSLDM0244PEFW	R	Shield	AD
SLD1002	PSLDM0245PEFW	R	Shield	AD

——— End of Main 2 Unit ———

PWB-C DUNTK9486WEV1 CRT UNIT

INTEGRATED CIRCUIT

Ref. No.	Part No.	★	Description	Code
IC851	VHiTDA6107Q-1	R	I.C.	AP

DIODES

Ref. No.	Part No.	★	Description	Code
D851	RH-EX0623GEZZ	R	Zener Diode	AA
D852	VHD1SS244//-1	R	1SS244	AB
D853	VHD1SS244//-1	R	1SS244	AB
D854	VHD1SS244//-1	R	1SS244	AB
VA851	RH-VX0050CEZZ	R	Varistor	AE
VA852	RH-VX0050CEZZ	R	Varistor	AE

COIL

Ref. No.	Part No.	★	Description	Code
L851	VP-CF681K0000	R	Peaking 680µH	AB

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C852	VCFYSB2EB224K	R	0.22 250V M.Polypro	AD
⚠ C854	RC-KZ0153CEZZ	R	Caracitor	AB
C855	VCEAGA2EW106M	R	10 250V Electrolytic	AC
C857	VCKYPA1HB391K	R	390p 50V Ceramic	AA
C858	VCKYPA1HB391K	R	390p 50V Ceramic	AA
C859	VCKYPA1HB391K	R	390p 50V Ceramic	AA
C866	VCEAGA2EW106M	R	10 250V Electrolytic	AC

RESISTORS

Ref. No.	Part No.	★	Description	Code
R851	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R852	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R853	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R855	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
R861	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
R867	VRD-RM2HD272J	R	2.7k 1/2W Carbon	AA
R875	VRD-RA2BE560J	R	56 1/8W Carbon	AA
R876	VRD-RA2BE560J	R	56 1/8W Carbon	AA
R877	VRD-RA2BE560J	R	56 1/8W Carbon	AA
R878	VRC-MA2HG335J	R	3.3M 1/2W Solid	AC

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
J2	QCNW-2220PEZZ	R	Connecting Cord	AC
J3	QCNW-2221PEZZ	R	Connecting Cord	AC
P851	QPLGN0361CEZZ	R	Plug, 3pin (H)	AB
P852	QPLGN0561CEZZ	R	Plug, 5pin (K)	AB
⚠ SC851	QSOCV0919CEZZ	R	CRT Socket	AH
TP854	QTiPM0083CEZZ	R	Tip	AB
TP855	QTiPM0083CEZZ	R	Tip	AB
TP856	QTiPM0083CEZZ	R	Tip	AB
	PRDAR0248PEFW	R	Heat Sink	AF
	LX-BZ3096CEFD	R	Screw	AA

——— End of CRT Unit ———

PWB-D DUNTK9480FMV1/V2 FRONT UNIT

Ref. No.	Part No.	★	Description	Code
TRANSISTORS				
Q1101	VS2SC1815GW-1	R	Transistor	AB
DIODES				
D1101	RH-PX0003PEZZ	R	Photo Diode	AF
D1102	RH-PX0274CEZZ	R	Photo Diode	AC
PACKAGED CIRCUIT				
PR750	RMPTP0085CEZZ	R	Packaged Circuit (29RN1)	AL
PR750	RMPTP0084CEZZ	R	Packaged Circuit (25RN1)	AL
CAPACITORS				
C752	VCFYSB2EB224K	R	0.22 250V M.Polypro	AD
C1101	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
RESISTORS				
R751	VRD-RM2HD391J	R	390 1/2W Carbon	AA
R752	VRW-KP41CR82K	R	0.82 15W Cement	AG
R753	VRW-KP41CR82K	R	0.82 15W Cement	AG
R1101	VRD-RA2BE273J	R	27k 1/8W Carbon	AA
R1102	VRD-RA2BE822J	R	8.2k 1/8W Carbon	AA
R1103	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R1104	VRD-RA2BE222J	R	2.2k 1/8W Carbon	AA
R1105	VRD-RA2BE391J	R	390 1/8W Carbon	AA
R1106	VRD-RA2BE122J	R	1.2k 1/8W Carbon	AA
R1108	VRD-RA2BE331J	R	330 1/8W Carbon	AA
R1109	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R1110	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
SWITCHES				
⚠ S750	QSW-P0588CEZZ	R	Switch	AP
S1101	QSW-K0079GEZZ	R	Switch, CH-Up	AB
S1102	QSW-K0079GEZZ	R	Switch, CH-Down	AB
S1103	QSW-K0079GEZZ	R	Switch, Volume-Up	AB
S1104	QSW-K0079GEZZ	R	Switch, Volume-Down	AB
S1105	QSW-K0079GEZZ	R	Switch, PRESET	AB
MISCELLANEOUS PARTS				
	PZETV0030PEZZ	R	Insulator	AD
J301	QJAKE0143CEZZ	R	Jack, R-IN	AG
J302	QJAKE0145CEZZ	R	Jack, L-IN	AF
J401	QJAKE0144CEZZ	R	Jack, VIDEO-IN	AF
P402	QPLGN0561CEZZ	R	Plug, 5pin (AV)	AB
P752	QPLGN0304CEZZ	R	Plug, 3pin (AA)	AB
P753	QPLGN0304CEZZ	R	Plug, 3pin (AB)	AB
P754	QPLGN0207CEZZ	R	Plug, 2pin (G)	AA
P1101	QPLGN0761CEZZ	R	Plug, 7pin (FR)	AD
RMC1101	RRMCU0227CEZZ	R	Remote Reciever	AK
	LHLDP1056PE00	R	Holder	AC
	PCLiC0002PEZZ	R	Clip	AB

——— End of Front Unit ———

PWB-E DUNTK9481FMV1 S-OUT UNIT

Ref. No.	Part No.	★	Description	Code
INTEGRATED CIRCUITS				
IC3301	VHiAN5275//-1	R	AN5275	AP
TRANSISTORS				
Q3301	VS2SC1815GW-1	R	2SC1815GW	AB
Q3302	VS2SC1815GW-1	R	2SC1815GW	AB
Q3303	VSKRC102M//-1	R	KRC102M	AA
Q3304	VSKRC102M//-1	R	KRC102M	AA
DIODES				
D3301	RH-DX0475CEZZ	R	Diode	AB
D3302	RH-DX0475CEZZ	R	Diode	AB
D3303	RH-DX0475CEZZ	R	Diode	AB
D3304	RH-DX0475CEZZ	R	Diode	AB
⚠ VA750	RH-VX0048CEZZ	R	Varistor	AE
COIL				
⚠ L750	RCiLF0031PEZZ	R	Coil	AR
CAPACITORS				
⚠ C750	RC-FZ012SGEZZ	R	0.22 AC250V M.Polypro	AE
⚠ C751	RC-FZ008SCEZZ	R	0.1 AC250V M.Polypro	AE
C3301	VCEAGA1HW107M	R	100 50V Electrolytic	AC
C3302	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C3303	VCEAGA1HW336M	R	33 50V Electrolytic	AB
C3304	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C3305	VCEAGA1HW107M	R	100 50V Electrolytic	AC
C3307	VCKYPA1HB562K	R	5600p 50V Ceramic	AA
C3309	VCKYPA1HB562K	R	5600p 50V Ceramic	AA
C3310	VCEAGH1HW108M	R	1000 50V Electrolytic	AE
C3311	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C3312	VCEAGH1HW108M	R	1000 50V Electrolytic	AE
C3313	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C3314	VCEAGH1HW108M	R	1000 50V Electrolytic	AE
C3315	VCEAGA1HW107M	R	100 50V Electrolytic	AC
C3316	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C3319	VCEAGA1HW335M	R	3.3 50V Electrolytic	AB
C3333	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C3334	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
C3336	VCEAGA1HW225M	R	2.2 50V Electrolytic	AB
RESISTORS				
R3301	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R3302	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R3303	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R3304	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R3305	VRD-RA2EE2R2J	R	2.2 1/4W Carbon	AA
R3306	VRD-RA2EE2R2J	R	2.2 1/4W Carbon	AA
R3308	VRD-RA2BE223J	R	22k 1/8W Carbon	AA
R3309	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R3310	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
R3335	VRD-RA2BE681J	R	680 1/8W Carbon	AA
R3336	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R3337	VRD-RA2BE472J	R	4.7k 1/8W Carbon	AA
R3339	VRD-RA2EE103J	R	10k 1/4W Carbon	AA
R3342	VRD-RA2BE101J	R	100 1/8W Carbon	AB
⚠ R750	VRC-UA2HG395K	R	3.9M 1/2W Solid	AA
⚠ R754	VRW-KQ41C1R8K	R	1.8 15W Cement	AG
MISCELLANEOUS PARTS				
⚠ F750	QFS-C5026CEZZ	R	Fuse, T5A/250V	AE
⚠ FH751	QFSHD1013CEZZ	R	Fuse Holder	AC
⚠ FH752	QFSHD1014CEZZ	R	Fuse Holder	AC
P3302	QPLGN0269GEZZ	R	Plug, 2pin (SV)	AB
P3304	QPLGN0861CEZZ	R	Plug, 8pin (FS)	AC

PWB-E DUNTK9481FMV1 S-OUT UNIT (Continued)

Ref. No.	Part No.	★	Description	Code
P3306	QPLGN0561CEZZ	R	Plug, 5pin (SL)	AB
P750	QPLGN0269GEZZ	R	Plug, 2pin (A)	AB
P751	QPLGN0304CEZZ	R	Plug, 3pin (AB)	AB
	PRDAR0244PEFW	R	Heat:Sink	AN
	LX-BZ3100CEFD	R	Screw	AA

——— End of S-OUT Unit ———

PWB-H DUNTK9547WEV0/V3 VM UNIT

Ref. No.	Part No.	★	Description	Code
			TRANSISTORS	
Q1401	VS2SA1837//-1	R	2SA1837	AF
Q1402	VS2SC4793//-1	R	2SC4793	AF
Q1403	VS2SC1815YW-1	R	2SC1815YW	AC
Q1404	VS2SA1015Y/1E	R	2SA1015Y	AC
Q1406	VS2SC1815YW-1	R	2SC1815YW	AC
Q1407	VS2SA1015Y/1E	R	2SA1015Y	AC
Q1408	VS2SC1815YW-1	R	2SC1815YW	AC
Q1409	VS2SC1815YW-1	R	2SC1815YW	AC
Q1410	VS2SC1815YW-1	R	2SC1815YW	AC
Q1411	VS2SC1815YW-1	R	2SC1815YW	AC
Q1412	VS2SK30AG//2E	R	2SK30AG	AD
Q1413	VS2SA1015Y/1E	R	2SA1015Y	AC
			DIODES	
D1401	RH-DX0475CEZZ	R	Diode	AB
D1402	RH-DX0475CEZZ	R	Diode	AB
D1403	RH-DX0086TAZZ	R	Diode	AC
D1404	RH-DX0086TAZZ	R	Diode	AC
D1405	RH-DX0475CEZZ	R	Diode	AB
D1406	RH-DX0475CEZZ	R	Diode	AB
D1407	RH-DX0475CEZZ	R	Diode	AB
D1408	RH-DX0475CEZZ	R	Diode	AB
D1409	RH-DX0475CEZZ	R	Diode	AB
			COIL	
L1402	VP-XF330K0000	R	Peaking 33µH	AB
			CAPACITORS	
C1401	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1402	VCKYPA2HB472K	R	4700p 500V Ceramic	AB
C1403	VCKYPA2HB472K	R	4700p 500V Ceramic	AB
C1404	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1405	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C1406	VCEAGA2CW106M	R	10 160V Electrolytic	AC
C1407	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C1408	VCCSPA2HL560K	R	56p 500V Ceramic	AA
C1409	VCEAGA2AW226M	R	22 100V Electrolytic	AC
C1413	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1414	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1415	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1416	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C1417	VCCSPA1HL680J	R	68p 50V Ceramic	AA
C1418	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1419	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1420	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1421	VCCSPA1HL120J	R	12p 50V Ceramic	AA
C1422	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1423	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1424	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C1425	VCCCPA1HH820J	R	82p 50V Ceramic	AA
C1427	VCEAGA1CW227M	R	220 16V Electrolytic	AC
			RESISTORS	
R1402	VRD-RA2BE561J	R	560 1/8W Carbon	AA
R1403	VRD-RA2EE560J	R	56 1/4W Carbon	AA
R1404	VRN-VV3AB2R7J	R	2.7 1W Metal Film	AA
R1405	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1406	VRD-RA2BE100J	R	10 1/8W Carbon	AA
R1407	VRD-RA2BE820J	R	82 1/8W Carbon	AA
R1408	VRD-RA2BE683J	R	68k 1/8W Carbon	AA
R1409	VRD-RA2BE123J	R	12k 1/8W Carbon	AA
R1410	VRD-RM2HD121J	R	120 1/2W Carbon	AA
R1411	VRD-RA2BE820J	R	82 1/8W Carbon	AA
R1412	VRD-RA2BE683J	R	68k 1/8W Carbon	AA

PWB-H DUNTK9547WEV0/V3 VM UNIT (Continued)

Ref. No.	Part No.	★	Description			Code
R1413	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R1414	VRD-RA2EE560J	R	56	1/4W	Carbon	AA
R1415	VRD-RA2EE2R7J	R	2.7	1/4W	Carbon	AA
R1416	VRS-VV3DB221J	R	220	2W	Metal Oxide	AA
R1417	VRD-RA2BE153J	R	15k	1/8W	Carbon	AA
R1418	VRD-RA2BE153J	R	15k	1/8W	Carbon	AA
R1419	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R1420	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R1421	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1422	VRD-RA2BE104J	R	100k	1/8W	Carbon	AA
R1423	VRD-RA2BE221J	R	220	1/8W	Carbon	AA
R1424	VRD-RA2BE151J	R	150	1/8W	Carbon	AA
R1425	VRD-RA2BE681J	R	680	1/8W	Carbon	AA
R1426	VRD-RA2BE104J	R	100k	1/8W	Carbon	AA
R1427	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R1428	VRD-RA2BE223J	R	22k	1/8W	Carbon	AA
R1429	VRD-RA2BE681J	R	680	1/8W	Carbon	AA
R1430	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R1431	VRD-RA2BE153J	R	15k	1/8W	Carbon	AA
R1432	VRD-RA2BE470J	R	47	1/8W	Carbon	AA
R1433	VRD-RA2BE151J	R	150	1/8W	Carbon	AA
R1434	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R1435	VRD-RA2BE393J	R	39k	1/8W	Carbon	AA
R1436	VRD-RM2HD471J	R	470	1/2W	Carbon	AA
R1437	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1438	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R1439	VRD-RA2BE392J	R	3.9k	1/8W	Carbon	AA
R1440	VRD-RA2BE222J	R	2.2k	1/8W	Carbon	AA
R1441	VRD-RA2BE223J	R	22k	1/8W	Carbon	AA
R1442	VRD-RA2BE222J	R	2.2k	1/8W	Carbon	AA
R1443	VRD-RA2BE682J	R	6.8k	1/8W	Carbon	AA
R1444	VRD-RA2BE822J	R	8.2k	1/8W	Carbon	AA
R1447	VRD-RA2BE221J	R	220	1/8W	Carbon	AA
R1449	VRD-RA2BE100J	R	10	1/8W	Carbon	AA

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
FB1401	RBLN-0020CEZZ	R	Ferrite Bead	AB
P1401	QPLGN0261CEZZ	R	Plug, 2pin (PU)	AB
P1402	QPLGN0761CEZZ	R	Plug, 7pin (VM)	AD
RDA1401	PRDAR0083PEFW	R	Heat Sink	AD
RDA1402	PRDAR0083PEFW	R	Heat Sink	AD

—— End of VM Unit ——

<table>
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29RN1G</td><td>25RN1C
29RN1C</td><td>25RN1F
29RN1F</td></tr>
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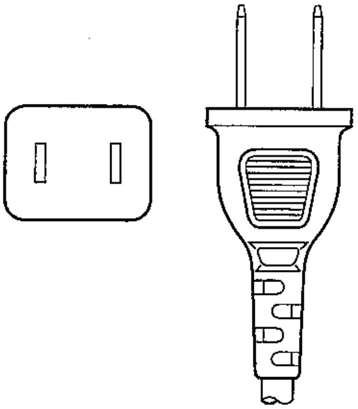
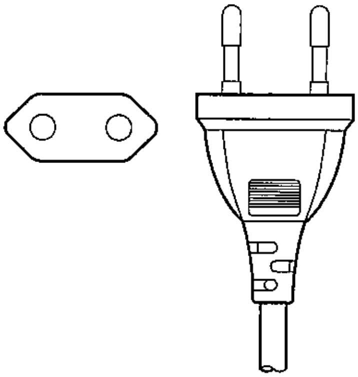
</td><td colspan="2">QACCZ2008PESA
</td></tr>
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MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
⚠	QACCZ2008PEZZ	R	AC Cord (25RN1C/29RN1C /25RN1F/29RN1F)	AM
⚠	QACCZ3008PEZZ	R	AC Cord (25RN1G/29RN1G)	AN
	QCNW-2194PEZZ	R	Connecting Cord	AN
	QCNW-2195PEZZ	R	Connecting Cord	AK
	QCNW-2196PEZZ	R	Connecting Cord	AG
	VSP0010PBU1WA	R	Speaker	AW
	VSP0010WBU28A	R	Speaker	AY
CN402	QCNW-2183PEZZ	R	Connecting Cord	AE
CN703	QCNW-2204PEZZ	R	Connecting Cord	AF
CN752	QCNW-2185PEZZ	R	Connecting Cord	AF
CN753	QCNW-2186PEZZ	R	Connecting Cord	AF
CN851	QCNW-2187PEZZ	R	Connecting Cord	AG
CN852	QCNW-2223PEZZ	R	Connecting Cord (25RN1)	AF
CN852	QCNW-2188PEZZ	R	Connecting Cord (29RN1)	AE
CN1101	QCNW-2184PEZZ	R	Connecting Cord	AH
CN3302	QCNW-2222PEZZ	R	Connecting Cord (25RN1)	AK
CN3302	QCNW-2198PEZZ	R	Connecting Cord (29RN1)	AH
CN3306	QCNW-2224PEZZ	R	Connecting Cord (25RN1)	AH
CN3306	QCNW-2197PEZZ	R	Connecting Cord (29RN1)	AH

——— End of Miscellaneous Parts ———

SUPPLIED ACCESSORIES

ACCESSORIES

Part No.	★	Description	Code
RRMCG1384PESA	R	Infrared R/C Unit	AV
TiNS-6304PEZZ	R	Operation Manual	AL
QPLGA0011CEZZ	R	AC Cord Holder (25RN1G/29RN1G)	AF
TMAPC3990PEZZ	R	Service Map (25RN1F/G)	AE
TMAPC3988PEZZ	R	Service Map (29RN1F/G)	AE

ACCESSORIES (NOT REPLACEMENT ITEM)

Part No.	★	Description	Code
TCAUA0002PEZZ	-	Caution Card	—

——— End of Accessories ———

PACKING PARTS

< NOT REPLACEMENT ITEM >

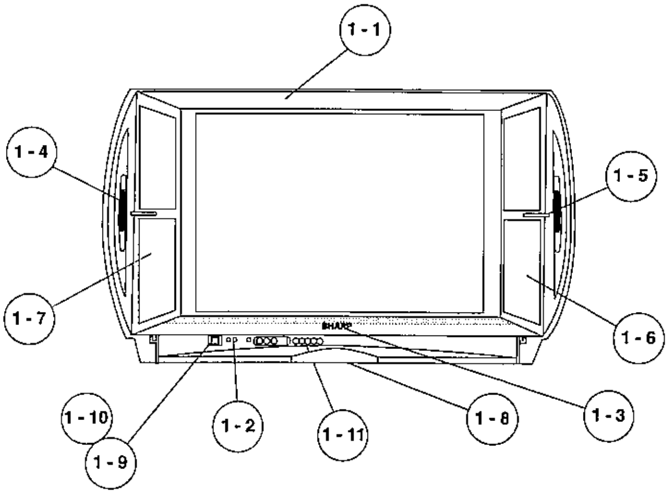
Part No.	★	Description	Code
SPAKC6331PEZZ	-	Packing Case (25RN1)	—
SPAKC6299PEZZ	-	Packing Case (29RN1)	—
SPAKX2679PEZZ	-	Packing Add. (25RN1)	—
SPAKX2672PEZZ	-	Packing Add. (29RN1)	—
SSAKA0002PEZZ	-	Polyethylene Bag	—
SSAKH0018PEZZ	-	Polyethylene Bag	—

——— End of Packing Parts ———

CABINET PARTS

Ref. No.	Part No.	★	Description	Code
1	CCABA2453WEV1	R	Front Cabinet Ass'y (25RN1)	CA
1	CCABA2436WEV0	R	Front Cabinet Ass'y (29RN1)	CB
1-1	Not Available	-	Front Cabinet	–
1-2	GCOVA0085PESA	R	R/C, LED Cover	AD
1-3	HBDGB3120CESA	R	SHARP Badge	AG
1-4	HDECA0047PESA	R	Dec. (L)	AD
1-5	HDECA0048PESA	R	Dec. (R)	AD
1-6	Not Available	-	Panching Plate	–
1-7	Not Available	-	Panching Plate	–
1-8	HDECQ0118PESA	R	Dec. Stage (25RN1)	AL
1-8	HDECQ0108PESA	R	Dec. Stage (29RN1)	AL
1-9	JBTN-0279PESA	R	Power Button	AD
1-10	MSPRC0006KJFW	R	Spring, Power Button (25RN1)	AC
1-10	MSPRC0015PEFW	R	Spring, Power Button (29RN1)	AC
1-11	JBTN-0280PESA	R	Control Button	AE
2	CCABB2358WEV0	R	Rear Cabinet Ass'y (25RN1)	BS
2	CCABB2347WEV0	R	Rear Cabinet Ass'y (29RN1)	BN

EXPRODED VIEW



——— End of Cabinet Parts ———

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